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DECEMBER 2001 NO. 64

Five No-Fail Steps to a Top-Speed Mac

1. Essential Upgrades
2. System Secrets
3. Hot Hardware
4. Scary Hacks
5. Expert Tips

SPEED UP YOUR MAC

REVIEWED:

Quicken 2002 Deluxe • Brother Laser Printer • Archos MP3 Jukebox
Minolta Digital Camera • Wacom Graphire2 Tablet • Timbuktu Pro 6
Baldur's Gate II: Shadows of Amn • LaCie CD-RW Drive • and more...

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Pros on Final Cut Pro® | #2 in a series

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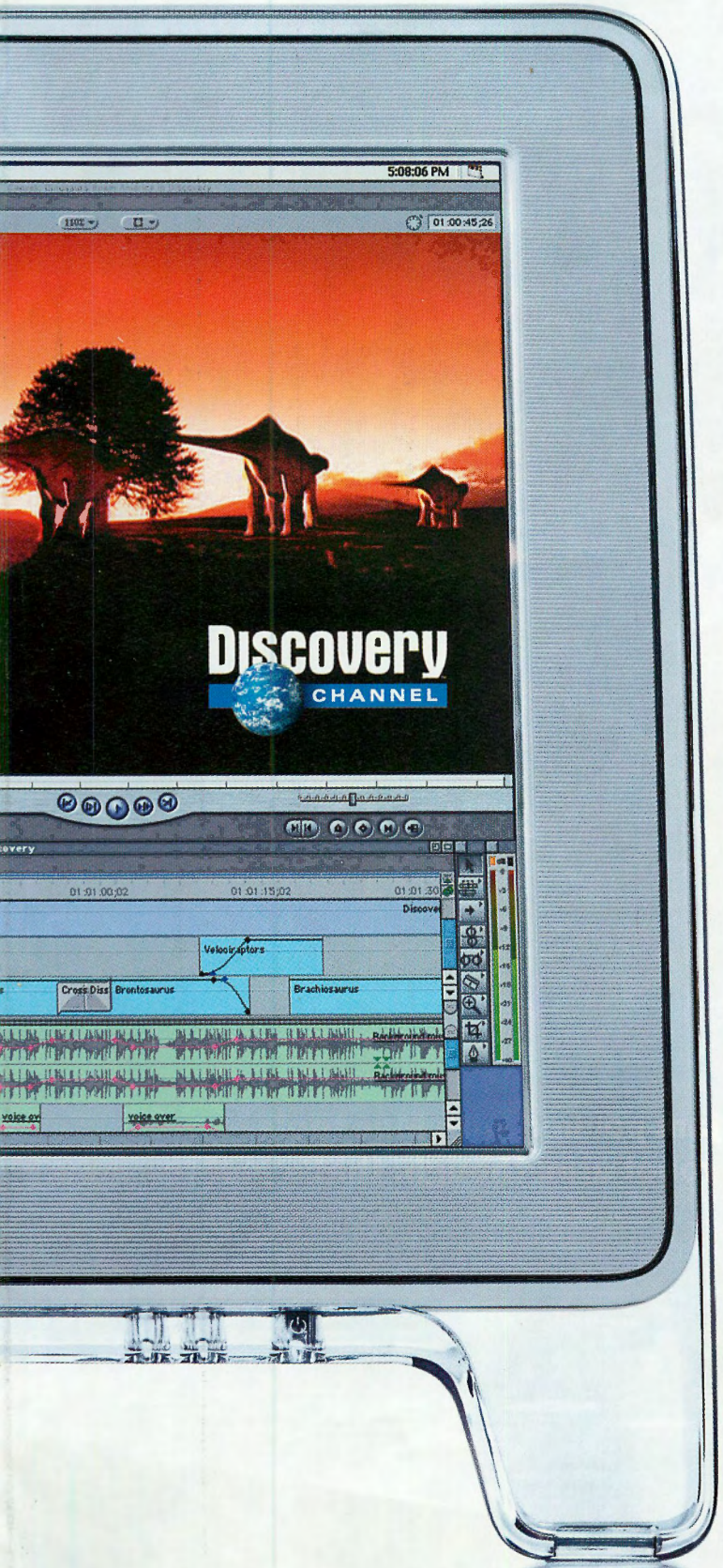
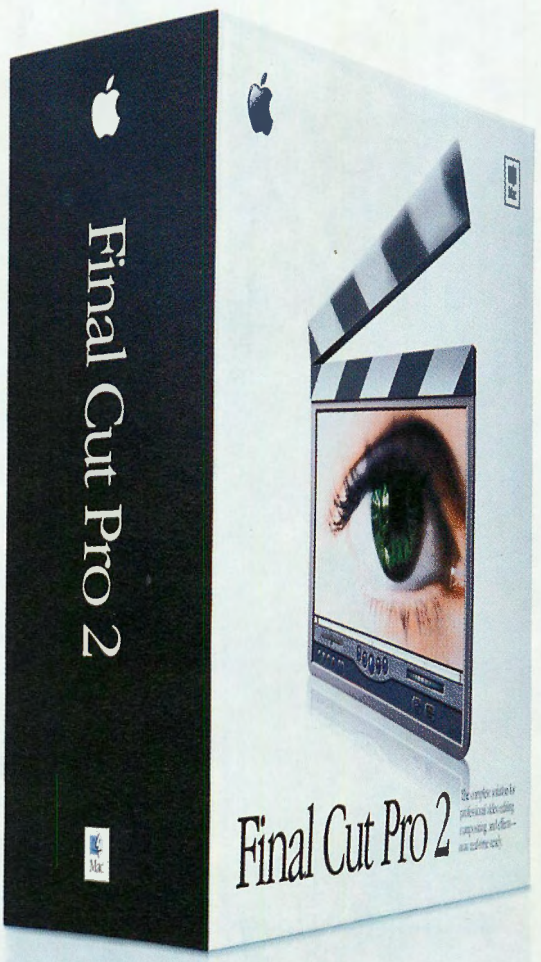


Barrett Sanders, Editor for Evergreen Films.

"Thanks to Final Cut Pro, I now have two complete high-end editing systems, without spending a lot of money. The program offers me a level of polish and professionalism I've never experienced before." Barrett first saw the capabilities of Final Cut Pro two years ago, and his comment at the time sums it all up nicely: "This is going to completely change production as we know it." Learn more at apple.com/finalcutpro.



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It's jam-packed with Mac tools.
The robot arm, though, that's just for show.

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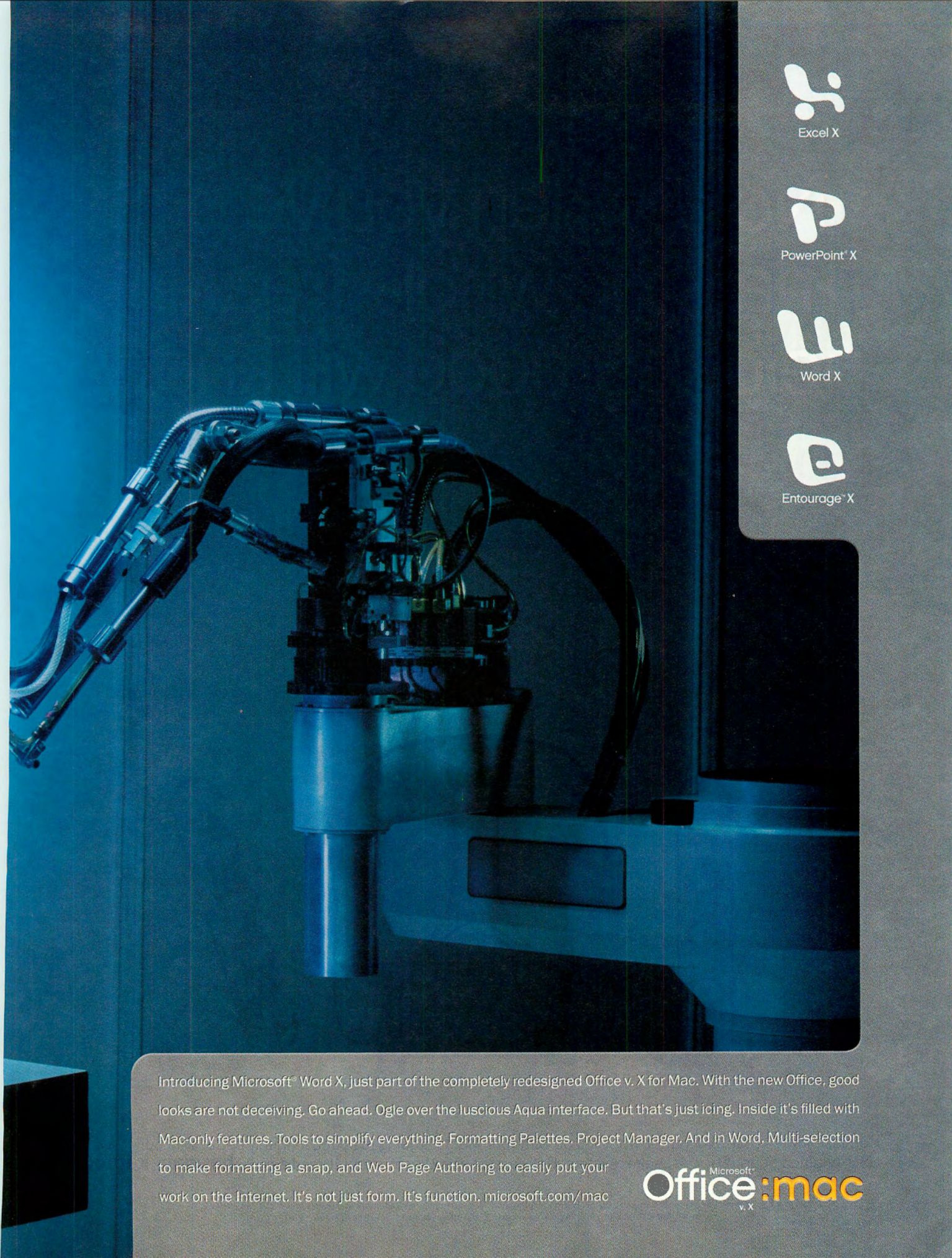
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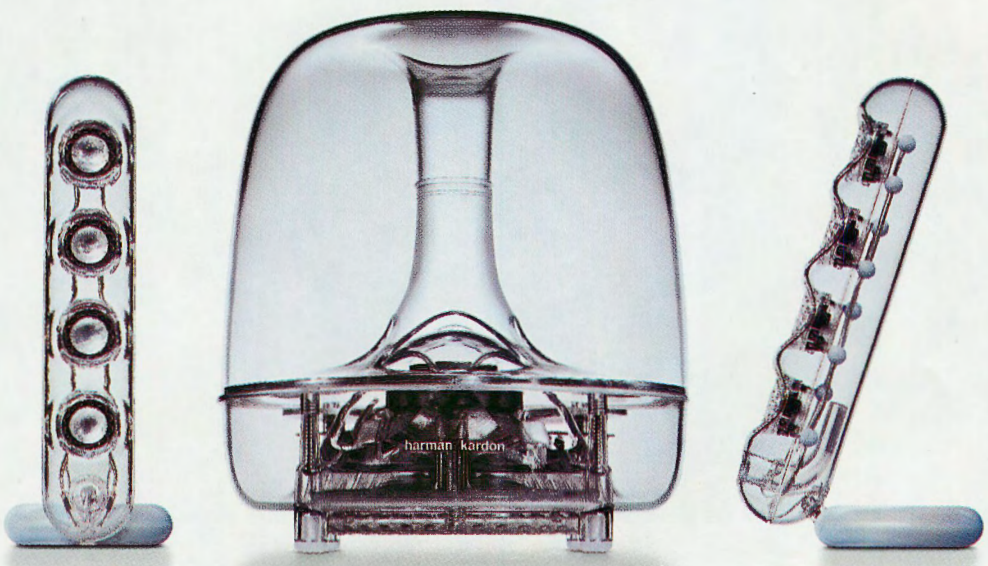

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MacAddict
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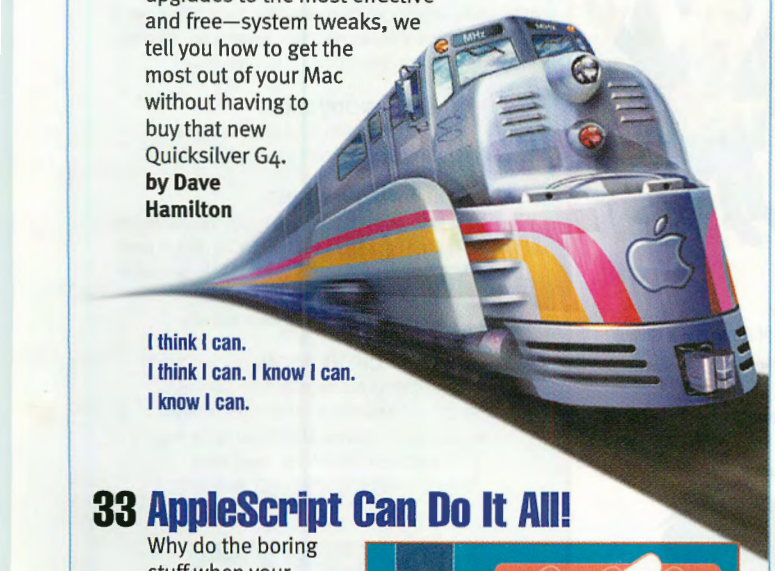
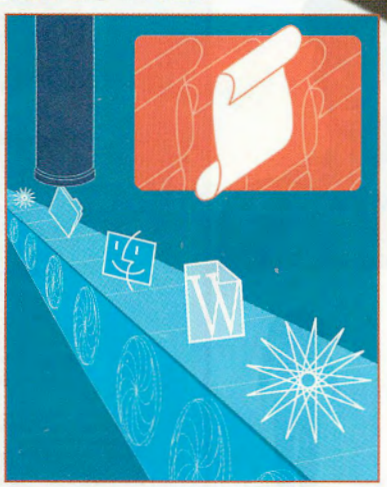
If your Mac is moving about as fast as a Yugo on a 45-degree grade, it's time to give it a boost. From the craftiest hardware upgrades to the most effective—and free—system tweaks, we tell you how to get the most out of your Mac without having to buy that new Quicksilver G4. **by Dave Hamilton**



I think I can.
I think I can. I know I can.
I know I can.

33 AppleScript Can Do It All!
Why do the boring stuff when your Mac can do it for you? That's our philosophy, anyway. If there's a repetitive, humdrum task you hate, chances are an AppleScript can take care of it for you. Now all you have to do is learn how to write AppleScripts. No problema, amigo... **by Ian Sammis**



Since I began scripting, my dreams have become pretty freakin' weird.

how to

66 Build a Photomontage
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Skeddadlin' bandwidth rustlers.

Tony Randazzo illustrated this month's cover.

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Sick of black turtlenecks?

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editor's note

What a difference .1 makes.

OS 10.1 is as reliable as Rik's trusty '78 Honda. Luckily, it's also quite a bit faster.

I'm no longer worried. I'm excited. Six months ago I installed Mac OS X, version 10.0, on my Mac—and it scared the crap out of me. Sure, it was gorgeous, and sure, its Unix underpinnings promised stability and power unachievable in any previous Mac OS, but I didn't want promise. I wanted performance.

Let's face facts, folks: Version 10.0 was cranky. Menus disappeared, icons moved wherever they damn well pleased, support for peripherals was weak—and it ran slower than my '78 Honda Civic.

Earlier this week I installed version 10.1, and immediately dope-slapped myself for ever doubting the Wizards of Cupertino. What a difference six months makes.

Simply put, Mac OS 10.1 works.

It's fast, it supports mass quantities of peripherals, its Aqua user experience has been polished to a fine sheen, it supports virtually every important networking and connectivity standard right out of the box, and—if my perception based on limited experience is correct—it's solid as a rock. What's more, it contains a horde of internal improvements that'll make life easier for third-party developers. And you know what that means, right? More and better goodies for Mac lovers like you and me.

Take OS 10.1's graphics enhancements, for example. Support for the PDF 1.3 imaging model? It's in there. ColorSync 4.0? Yup. NVidia GeForce3 support? Uh-huh. How about improved printer support? More than 200 built-in PPD files, at your service.

Audio improvements also abound, starting with high-resolution, 24-bit, 96kHz audio. In fact, OS 10.1 manages all audio as 32-bit floating-point data, which not only results in great sound today but also paves the way for even higher-resolution sound tomorrow. Multichannel audio processing is also built in, allowing developers to craft as many channels as they need. Home-theater-on-a-Mac, anyone? There's also built-in MIDI management and a new DSP (digital signal processor) plug-in architecture called Audio Units that'll make it easier for developers to create standardized plug-ins for audio effects such as distortion, reverb, and quack-like-a-duck converters. Just kidding about that last one. I think.

The networking and connectivity improvements are freakin' insane. With OS 10.1 installed, your Mac can seamlessly communicate with most every computer on the planet—though we're not completely certain about the Timex/Sinclair 1000. (Now take a deep breath, because we're about to enter the rarefied air of acronym-land.) Built right inside OS 10.1 is support for AFP over AppleTalk, AFP over IP, SMB/CIFS connectivity that lets your Mac be a client of Windows and SAMBA Unix servers, and—of course—good ol' PPP, PPPoE, NFS, and LDAP capabilities. If you know what I'm talking about, you know that I'm mixing networking and connectivity terminology rather freely here. If you don't know your LDAP from your PPPoE, suffice it to say that your 10.1-equipped Mac will.

One last acronym: WebDAV. Now that 10.1 is Apple's operating system du jour, iDisk will be hosted using the industry-standard WebDAV protocol. What does this mean to you? Well, because WebDAV allows your iDisk to connect to Apple's servers only when you access it, you can now leave your iDisk mounted on the desktop at all times. No more annoying time-out messages.

But wait! There's more! AppleScript improvements; DVD support; Finder-based burning of data CD-R, CD-RW, and DVD-R discs; OpenGL speed improvements; speedier file copying; XML-RPC and SOAP support for whizzy Internet apps; two-line icon names...and so on. All good stuff.

My early OS X fears were groundless. As I tell my kids, sometimes it's good to be wrong.—*Rik Myslewski*

One final note. All of us here at MacAddict *open our hearts to any and all of you who lost friends, family, colleagues, or coworkers in the events of September 11. We can't know how you feel, but we can let you know that you're part of a community that cares, and cares deeply. A loss felt by one is shared by all.*

Staff Rants

Jenifer Morgan

Xing Out the X Editor

Q. *What will you do with all the time you save by using OS 10.1?*

A. Lobby to ban Roman numerals from marketing schemes worldwide.

Q. *What new feature do you want in OS XI?*

A. I would like a parrot-joke generator, with a little bird-cage icon.

Kris Fong

The Procrastinateditor

Q. *What will you do with all the time you save by using OS 10.1?*

A. Oh, I'll eventually try to figure out how to unlearn everything I've been used to doing since System 7, and figure out where everything is in OS X.

Q. *What new feature do you want in OS XI?*

A. An aspirin dispenser.

Andrew Tokuda

Chief Agoraphobe

Q. *What will you do with all the time you save by using OS 10.1?*

A. I'll finally step outside to enjoy the scenery. I'll look up at the sky and marvel at how it looks nearly as real as the skies in Bryce 3D.

Q. *What new feature do you want in OS XI?*

A. Programs that will run on it.

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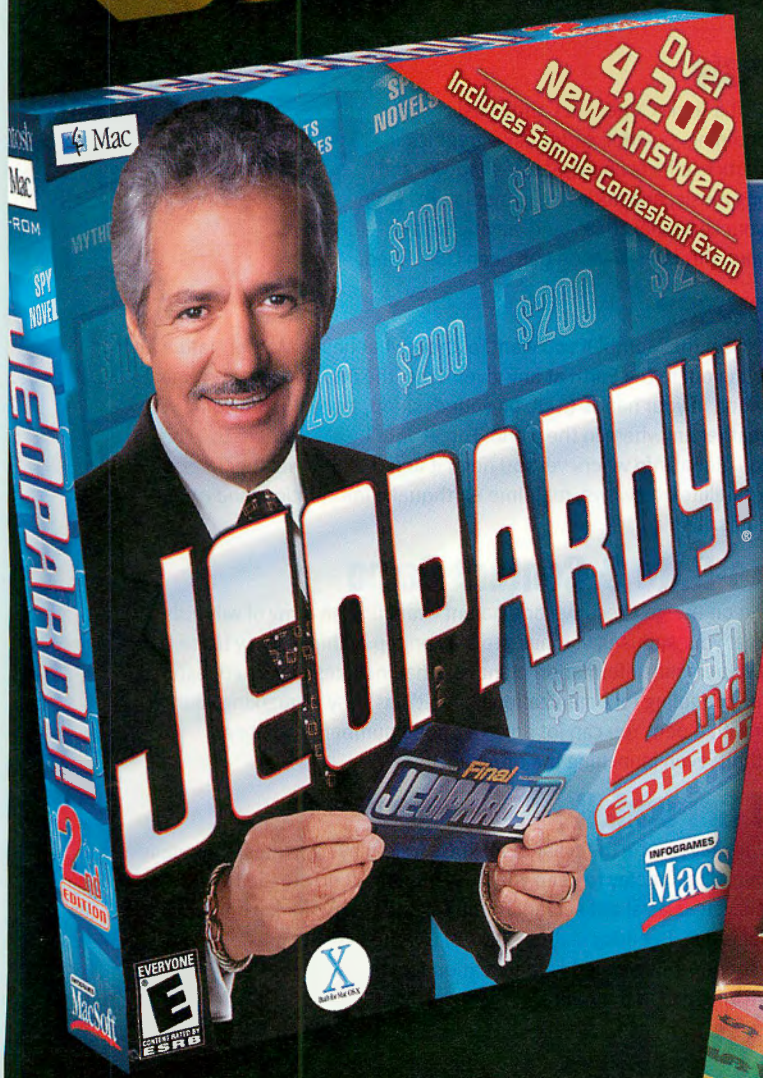

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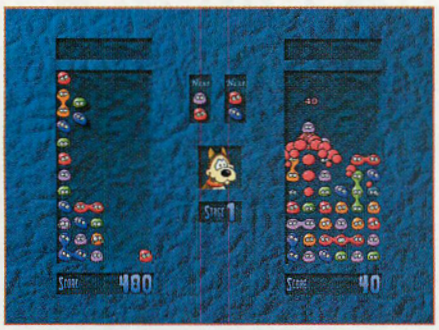
Software to Keep You Cozy Through the Holiday Season



Candy Crisis: Sweet! Candy Crisis not only looks lickable, its fast pace will lick even the most brain-centric gamer.

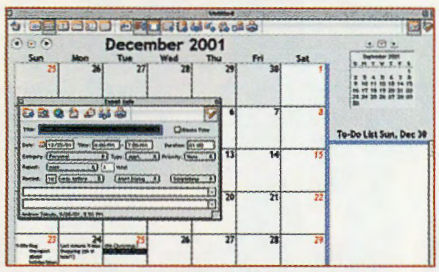
Candy Crisis

Sure, you can call it a Tetris clone, but Candy Crisis is much more entertaining. Colorful, cartoonlike graphics (complete with particle effects and dynamic shadows and lighting), charming music, and addictive gameplay will keep you planted on your computer chair—and craving Skittles—for hours. What's more, this latest version has been OS X–ified.

EarthBrowser: Get the latest weather from EarthBrowser so you can prepare to freeze your butt off when you're heading to San Francisco.

EarthBrowser

Our Shareware Pick of the Month! If you want to know what havoc Mother Nature and her forces are doling out to the Earth at any given time, the intuitive EarthBrowser puts the whole world in your hands (well, on your desktop, anyway), providing you with real-time weather anywhere in the world. Forget your local weather guy—this program gives you global info whenever you need it and features weather forecasts, cloud-formation satellite overviews, real-time earthquake information, and round-the-world Web cams.



Now Up-To-Date & Contact: Making a shopping list for Christmas dinner? Now you won't forget the Tater Tots.

Now Up-to-Date & Contact Demo

Whether you're an on-the-go executive or a parent wrangling an army of wily kids (and let's not forget your spouse), you need to stay on top of things. Now Up-to-Date & Contact is a PIM (personal information manager) that includes advanced features like networkwide scheduling for organizations, and it's as easy as marking your kitchen calendar with a pen! You can jot down a phone number or create an appointment without even launching the program.

Pillars of Garendall: Drat! My sword is useless against that deceptive mullet shield!

Pillars of Garendall

Pillars of Garendall may just be the pillar of all RPGs (role-playing games). Brimming with over 100 hours of gameplay to keep you busy indoors during the long winter break, Pillars stars you as a valiant servant of the Garendall kingdom, where you do battle with all that is evil. Beenox created Pillars of Garendall using the Coldstone Game Engine, a soon-to-be-released game-creation tool that we expect similar games will use as a launching pad in the future.

Holiday Bonus: December Nitrozac comics; "Best of Mac Show Live," volume 5; Bert's Unix tutorial, part 3; Maya demonstration movies; exclusive Steve Jobs paper doll and wardrobe.

Radius **is an Internet film from K2 Films. The company's Web site (www.radius.com) covers the making of the film in a journal-entry style, so you can follow its progress. This month's staff video takes an exclusive, behind-the-scenes look at some of the special effects in the film, and shares some words of wisdom from Helmut Kobler, director of *Radius*, who gladly participated in an impromptu interview one summer afternoon. The trailer for *Radius* is also on The Disc.**

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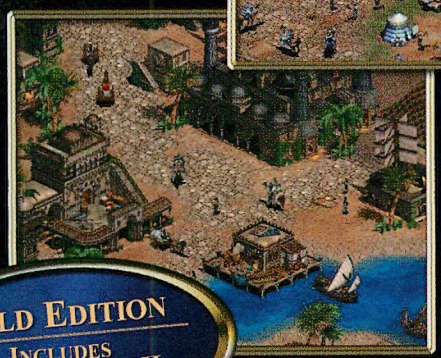

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Letters

Everyone's got an opinion.

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FOR CD PROBLEMS: Go to https://secure.imaginemedia.com/disc/.
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MAC-ROSOFT

Thanks for a great article on Microsoft and the MacBU. It's good that people know the truth about Microsoft: Namely, as far-fetched as it seems, the people writing Mac software really care about the platform. It's nice to know we can still make Bill Gates look over his shoulder once in a while. *—Dan Wiencek*

BAD MEMORIES

Last summer I took a computer-game programming course at a school in Redmond, Washington. Every day for one-half hour, I rode on a bus full of Microsoft employees from Seattle through the Redmond Microsoft campus on the way to school. It took a lot of therapy, but I finally blocked out the horrible images I'd seen (ugly-ass portables and employees). Well, what do I see when I watch the October 2001 staff video: the Place of Doom! I guess it's back to my Microsoft-induced nightmares and incoherent babbling.—*Stephen Frerotte*

FLIRTING WITH THE ENEMY

In your article on Microsoft, you omitted one rather important fact: They are criminals. I expect better from you guys. No more foolishness about how Microsoft is nicey-nicey, please. They are nobody's friend, and in your hearts you know it.—*Chris Johnson*

SOUND OFF

In your article "150 Shareware Gems" (Oct/01, p26), you left out an excellent application called SoundApp 2.7 by Norman Franke. Without this wonderful, free application, I would spend needless hours at my computer manually converting tons of MP3s to CD-quality AIFF files. SoundApp can run in the background while I surf the Internet, or for large files, it can batch-convert them and beep me when it's done. I humbly nominate SoundApp 2.7 for the top 25 utilities no Mac user can live without. *—Terry Jackson*

FROM ONE OLD DUDE TO ANOTHER

It is good to see a fellow old guy in charge of a Mac rag. I'm a freak for *MacAddict*. I think I have one of the first few Discs. I remember when the Beatles were new and when microwave ovens were the wave of the future. I bought my first Mac, an SE, in 1986. Since then I have owned an LC, a Performa, an iMac DV SE, and a G4. In all that time, I've only taken two machines to the shop. Lightning fried the SE, so I had to replace the analog board, and I kicked the CD tray on the G4 and had to replace the drive. You go, dude.—*Ray Meyers*

GATES IN HIDING

When I received my October issue of *MacAddict*, I turned to page 6 to read about the new editor, and I thought, "No! Bill Gates in *MacAddict* holding a TiBook?" Fortunately, I didn't throw away the mag—I saw it was our new editor. Hey Rik, I go back to 1984 with Apple. My first was an Apple IIe.—*Woody Schlegel*

SHARING OPINIONS

I read with interest your article "150 Shareware Gems" (Oct/01, p26). You left out MacNuclide, written by Craig Stone and available from Brookhaven National Lab (www.nndc.bnl.gov). As a nuclear engineer and an avid Mac user, I find it as valuable as a chart of the nuclides.—*Kermit*

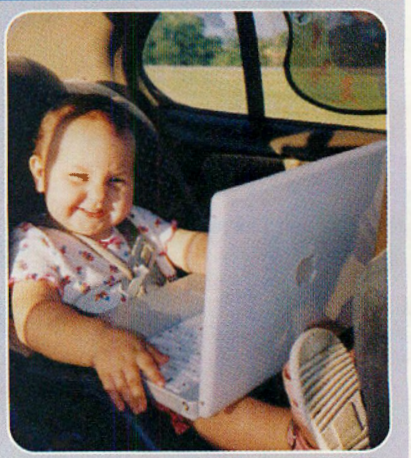
AN UNREAL TABLET

I'm playing Unreal Tournament and I pick up my Wacom mouse. Lo and behold—when I put the mouse down twice, the game reacted to it. The second button (on the mouse) even fired secondary fire. Try it, it's really fun.—*Logan Swanson*
Wacom's drivers now support input sprockets, so some of your games will respond to its mouse.—Ed.

JUST GOOD PLAIN FUN

The author of "Shareware Pick of the Month" (*Get Info*, Sep/01, p18) was correct when she wrote: "Sometimes the no-frills games are the most fun to play." I play Artillery on my Mac SE very often. I also play Risk, Cyberblast, and other old games without stunning graphics, and I still have lots and lots of fun.—*Josh Hillmann*

Recently Sighted



Our newest addition to the family (Audrey, age 16 months) found a 13-hour road trip easier to handle thanks to our *other* newest addition to the family (Snow iBook, age 3 months).—*Rod Lott*

WHO'S THAT ANIMATOR?

OK, I give up. The September Disc rocks. It's the best ever. I want a lifetime subscription. Mostly I want to know what apps you used to build the animation and interface. *—Eric Howell*
One of our readers, Michigan J.S., did the animation using Newtek Lightwave 3D and Adobe After Effects. MacAddict *editor Ian Sammis built the tour using REALbasic (the demo of which is included on The Disc just about every month).*—Ed.

NOW THAT'S A MAC ADDICT!

I wanted you to know what a special place your magazine occupies in my household. Sometimes I get so wrapped up in reading *MacAddict* that I forget what I'm doing and stay on the toilet until my legs go numb. *—Robert Westmoreland*

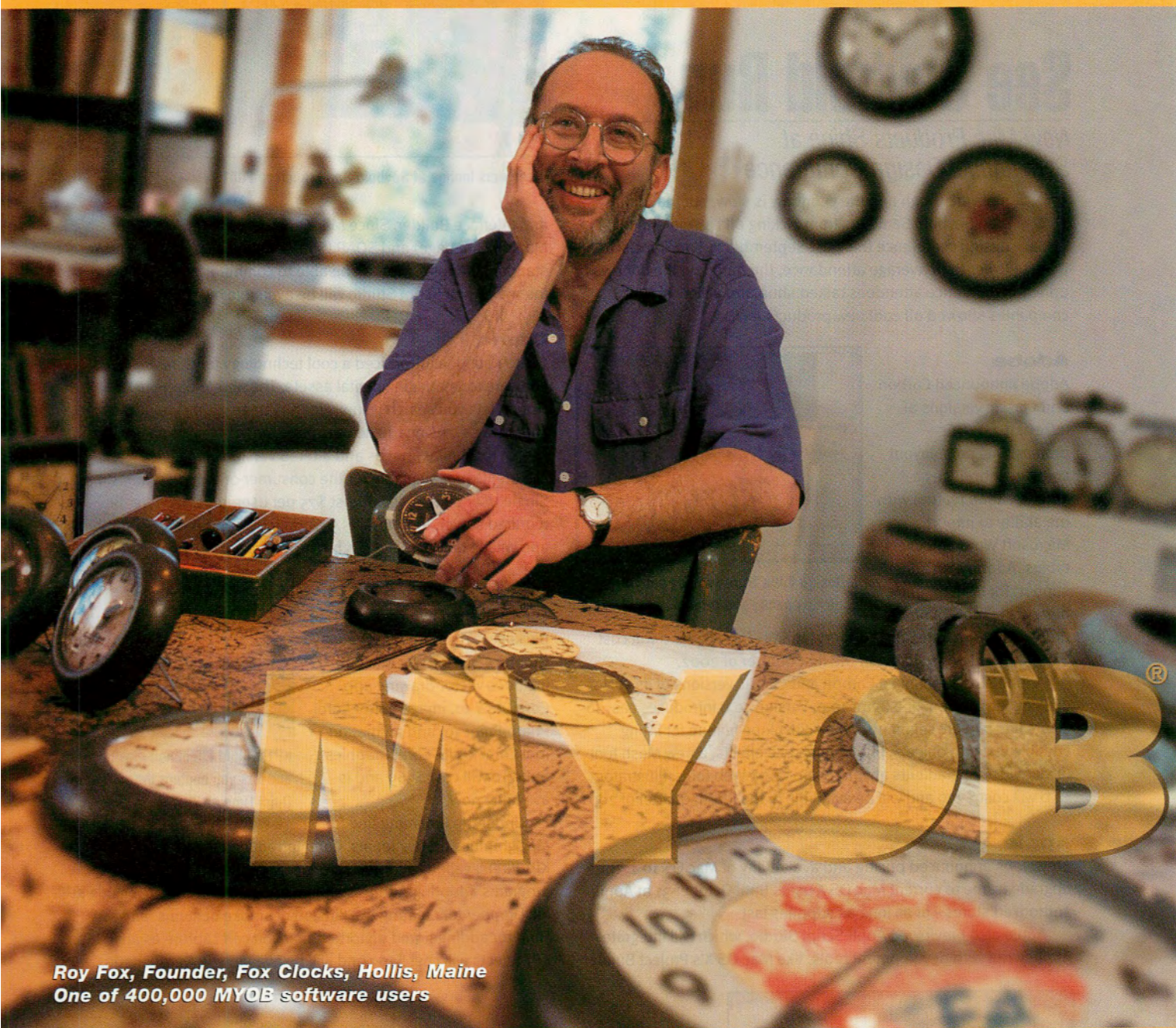
PERLY MISTAKES

Oy vey! Do you want to make all of the Perl hackers reading your magazine pull out their hair? In your story "Find and Use CGI Scripts with Mac OS X" (Sep/01, p66), you repeatedly referred to Perl as PERL. It made you guys look almost as stupid as PC users who refer to the Macintosh as MAC (but not quite).—*Thomas Dale*

DESIGNED FOR THE WAY YOU WORK

I'd rather create clocks than invoices.

If I wanted to keep books all day, I'd have been an accountant.



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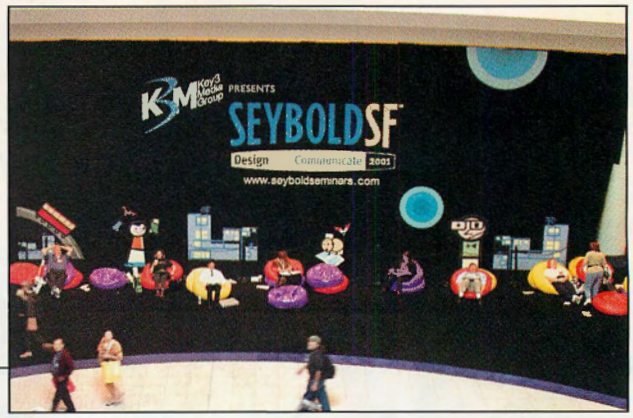
Antique frames. Quartz movements. That's my business. MYOB software works for me.

get info

The news of the month in bite-size chunks.



PHOTOGRAPHY BY W. B. JONES

Designers lounge at Seybold San Francisco 2001.

See Seybold Run

New Mac Products Shine at Semiannual Design Conference

Times are tough and the economy is slow, but that didn't stop Seybold Seminars from kicking off its semiannual design conference this past September in San Francisco. Despite lower-than-average attendance, the mood on the floor was upbeat: Conference attendees talked shop and a slew of Mac companies showed off cool new products.—*NR*

Adobe

Adobe announced Carbon and Classic versions of InDesign 2.0. This professional page-layout software introduces a table-creation feature with the ability to import Microsoft Word and Excel tables. Adobe also added support for transparency, better type tools, a new drop-shadow palette, and support for XML. InDesign 2.0 will cost $699 and will be available in the first quarter of 2002.

InDesign 2.0's Transparency palette controls opacity and retains transparency.

Adobe also announced Carbon and Classic versions of its vector-drawing application, Illustrator 10.0. Version 10.0 introduces easy-to-create line and arc segments, a new Envelope feature for fitting editable text into objects, Photoshop-style effects, a new Mesh tool (it's not just for gradients anymore), and new Web tools. Illustrator 10.0 will cost $399 and will be available in the fourth quarter of 2001.

Apple

Steve Jobs announced pricing and availability of Mac OS 10.1. The upgrade is free to current Mac OS X users until October 31 at Apple-authorized stores—or as long as supplies last.

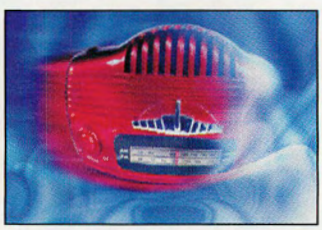
Apple also previewed AppleScript Studio, which will integrate AppleScript with development tools, like Mac OS X's Project Builder and Interface Builder. Since Mac OS 10.1 supports XML (Extensible Markup Language) and SOAP (Simple Object Access Protocol) Web standards, AppleScript will be able to communicate with data on the Internet. AppleScript Studio will be available by the end of 2001.

Canto

Canto and Idée introduced a cool technology for Cumulus 5, software for managing digital assets. The new Espion Visual Search Option lets you search visually for an image within your collection. That is to say, using the actual image (not a string of text), you can search for similar images and altered versions of that image. Espion is currently not available for the consumer-oriented Cumulus 5 Single User Edition. It will cost $75 per user, plus $295 for the required server, for Cumulus 5 Workgroup and Enterprise editions and will be out for Mac OS X by the end of 2001.

Corel

Corel launched two new packages. The Corel-branded Graphics Suite 10 for Macintosh includes vector-drawing app CorelDraw 10, image editor Corel Photo-Paint 10, and animation tool Corel RAVE. Corel Graphics Suite 10 will cost $569 and is available now.



KPT's Fluid Effect liquefies images and lets you capture the process in QuickTime or PICT animation.

Under the Procreate line for Mac graphics professionals, Corel introduced the next batch of nine KPT filters, called KPT Effects, for use with Photoshop and other programs adopting Adobe's plug-in architecture. Effects include KPT Ink Dropper for creating the illusion of smoke or stains, and KPT Fluid for adding liquid distortion that you can capture as animation. KPT Effects will cost $199 and will be available in October 2001.

Adobe brought 54 G4s to the show floor for software workshops.

Digital photographer Stephen Johnson shows his work, including a haunting 1998 New York City skyline (right).

HOLIDAY SHOP by Stereotype

Finding the right gift for the right price for the right person can be the true nightmare before Christmas, Hanukkah, Kwanzaa, or any other end-of-year celebration. We're here to help. Match the stereotype to the personality of the loved one you're trying to shop for, dig up about $100, and buy the stuff we suggest. Check system requirements before you buy.

For the Paranoid Freak

Norton Internet Security (Symantec, www.symantec.com, $99)
For those fearful of hackers and body snatchers, this combination personal firewall, antivirus software, and Internet cookie remover will address at least the first problem.

Mac Companies Donate to Relief Efforts

Victims and Relief Workers Get Software, Hardware, and Monetary Help

Within the first week of the September 11 tragedies that befell New York, Washington, D.C., and Pennsylvania, Mac-related technology firms quietly joined the rest of America in contributing to disaster-relief efforts. Here's a partial list of what some companies did to help.—*NR*

Adobe Systems

Adobe donated $250,000 to the Red Cross disaster fund and raised an additional $50,000 from employee donations, which the company matched.

Aladdin Systems

Aladdin Systems donated $1 of each online sale for 30 days to the American Red Cross.

Apple Computer

Apple donated $1 million to families of rescue workers who lost their lives and donated one iBook to each of these families with children.

Canon

Canon donated $100,000 to the American Red Cross, and gave hardware to the New York City Police Department's Crime Scene Unit for evidence recovery, documentation, and victim identification.

ComputerWare

ComputerWare donated $25 per September Macintosh sale to the American Red Cross.

Eastman Kodak Company

Kodak gave $2 million to the American Red Cross.

Handspring Foundation

Handspring donated 500 Visor Deluxe handheld organizers and 500 Visor phones to the American Red Cross, the New York City Police Department, and the New York City Fire Department. Voice Stream provided free phone service.

Microsoft

Microsoft donated $5 million in cash and $5 million in software to various relief efforts.

Palm

Palm donated handheld organizers and wireless networking services to the Federal Emergency Management Agency (FEMA), the American Red Cross, and the U.S. Navy.

Sony

Sony donated $3 million to the American Red Cross and $1 million to the New York City Public/Private Initiatives.

Thursby Software Systems

Thursby donated its online sales through September 21 to the American Red Cross.

The Mobile Mac of Burning Man

Art Fest Serves Up Pyrotechnics and Mac-Driven Entertainment

The annual Burning Man festival, held in Nevada's barren Black Rock Desert, is a mecca for art, pyromaniacs, and cutting-edge technology. Some of this chaos runs on the Mac. This year, James Peterson, an animator from Venice Beach, California, constructed a beat-mixing bicycle. Using a Powerbook 1400c (wrapped in a plastic bag to keep out the dust), a pair of old speakers, a car battery, an amplifier, and a few parts from Radio Shack, Peterson ran Propellerhead's drum 'n' bass program, ReBirth ($179, www.propellerheads.se), and Syclone Multimedia's techno mixer, AudioFusion TWS ($25, www.download.com), to mix funky music while peddling around the festivities.—*Leigh Webber*

PHOTOGRAPHY BY LEIGH WEBBER

James Peterson (above): the mobile, musical Mac man at the Burning Man festival (inset).

newSTUFF

Visor Pro and Visor Neo

Handspring, www.handspring.com, $299 (Pro) or $199 (Neo)

Handspring announced September 2001 availability of two new handheld organizers: Visor Pro and Visor Neo. The Visor Pro comes with 16MB of memory and rechargeable batteries. The Neo comes with 8MB of memory and hard, translucent-colored cases reminiscent of Apple's Ruby and Indigo iMacs.

Palm m125

Palm, www.palm.com, $249

Palm's hoping to bridge the gap between its professional and consumer markets with the new m125 handheld organizer. The 5.3-ounce device has 8MB of memory, a faster processor, support for Secure Digital (SD) and MMC storage standards, and USB hot syncing. Palm announced and shipped the m125 in September.

DuoConnect

Adaptec, www.adaptec.com, $129

Adaptec announced September 2001 availability of a combination USB 2.0 and FireWire PCI card. The card has four USB ports (one internal and three external) and three FireWire ports (two external and one internal). DuoConnect is bundled with a 6-foot FireWire cable.

USB AudioSport Quattro

Midiman, www.midiman.net, $349.95

In August Midiman announced availability of the USB AudioSport Quattro. With four channels in and four channels out, the Quattro offers 16-bit, 44.1kHz and 48kHz sampling rates, plus limited (only two-channel) 24-bit, 96kHz recording and playback.

Z-560 Speaker System

Logitech, www.logitech.com, $199

In September Logitech announced the Z-560, a four-speaker plus subwoofer set with 400 watts of power. This system is THX certified for home theater–style audio. Its Matrix 3D Surround Sound gives some audio CDs the benefit of four-channel audio. It should be available in mid-October 2001.

For the Rocker

Cakewalk Metro SE (Cakewalk, www.cakewalk.com, $29) You can't wrap this download-only software, but it's the easiest introduction to multitrack digital and MIDI recording around. To run Metro SE, you will need an iMac, a G3, or a G4.

Bass Method 1 (eMedia, www.emediamusic.com, $59.95) For that special someone who keeps meaning to learn how to play bass guitar, eMedia's Bass Method 1 CD-ROM provides over 100 step-by-step lessons with video tutorials. eMedia also sells Guitar Method 1 for the same price.

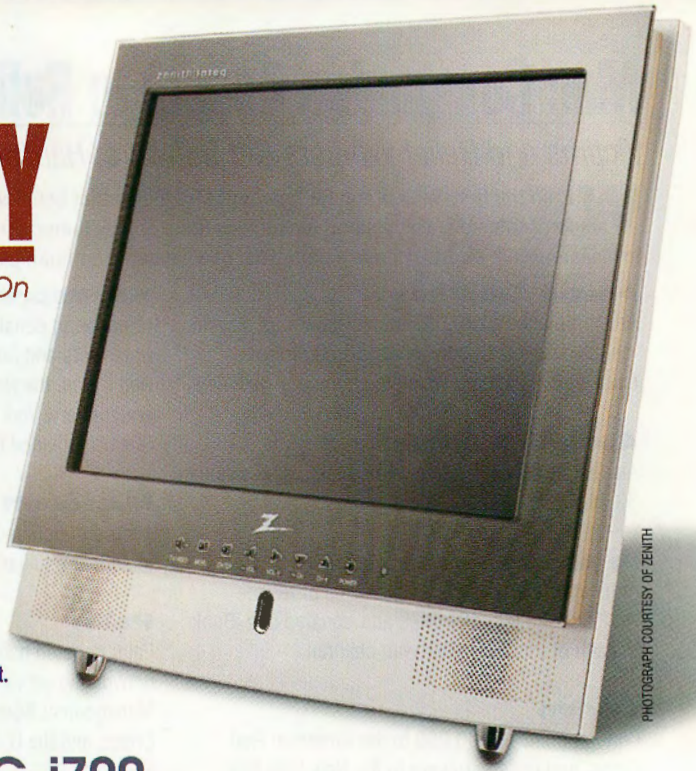
droolWORTHY

Sexy Stuff We Can't Wait to Get Our Mitts On

ZLD15AI LCD TV

Zenith	www.zenith.com	$1,299.95

There really is no reason to leave the house now. This 15.1-inch silver sliver is both a TV and computer monitor, with a screen resolution of 1,024 by 768. The strangely named ZLD15AI features a built-in analog TV tuner with 181-channel capacity, stereo TV sound, and a slew of connectors for hooking up to computers, DVD players, and VCRs. Going outside is, like, so overrated.—*NR*



A TV and computer monitor in one—that's the way, uh huh uh huh, we like it.

PHOTOGRAPH COURTESY OF ZENITH

Digital cameras that surf the Web—such an exciting concept that the RDC-i700 is taking the news lying down.

RDC-i700

Ricoh	www.ricohzone.com	$1,299.99

No, it didn't fall over. The Ricoh RDC-i700 digital camera lies flat and has a 3.5-inch LCD display that pops upward for viewing and editing images with a stylus. But the hardware isn't the only unusual feature of this 3X optical zoom camera. The RDC-i700 is one of the first Internet-ready digital cameras to hit the U.S. market. It comes complete with a minibrowser for Web surfing and memory for emailing your pix directly from the camera (Ricoh sells the modems separately). Like most multifunction gadgets, this one's not perfect. Some of the data-management and networking features are currently Windows only.—*NR*

PHOTOGRAPH COURTESY OF RICOH

Shareware Pick of the Month

EarthBrowser 1.5.4

PRICE: $19.95 (download), $29.95 (CD-ROM)
URL: www.earthbrowser.com

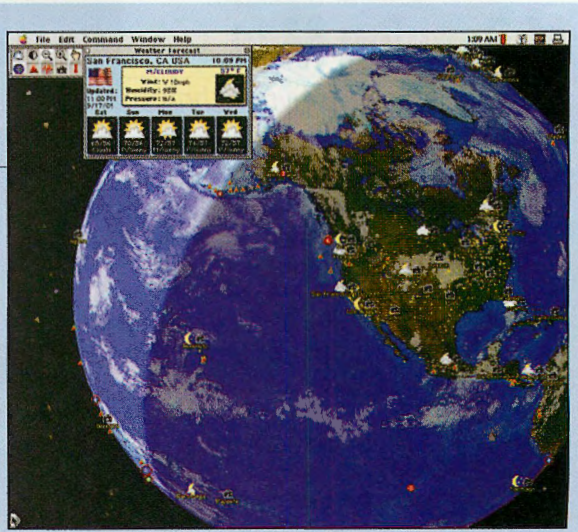
Find EarthBrowser 1.5.4 on The Disc.

Fasten your seatbelt and get ready for takeoff with Lunar Software's EarthBrowser 1.5.4. Click a 3D model of Earth that lets you explore our planet's diverse climates and geographies from the safety of your desk chair.

Check out real-time weather conditions and five-day forecasts for over 450 cities around the globe. Find hourly updates of earthquake locations and magnitudes, and get the latest information on volcanic eruptions.

The newest version of EarthBrowser contains over 300 worldwide Web-cam images, which update daily, sometimes even by the minute. Additional features include hourly updates of cloud-cover satellite images, a grid showing latitude and longitude, and day-to-night shadows. EarthBrowser 1.5.4 is available for Mac OS 8.1 and later, including Mac OS X.

There is a free version of EarthBrowser, but paying the shareware fee gives you high-resolution maps and zooming capabilities 25 times the resolution of the demo. We think it's worth the price.—*Whitney Hess*



Looks like sunny skies ahead in San Francisco. Clicking the country flag brings you to *The World Factbook* from the CIA.

HOLIDAY SHOP by Stereotype

For the Artist

Graphire2 (Wacom, www.wacom.com, $99.95) This pen, tablet, and mouse combo is the best value for art hobbyists looking to tinker with drawing and photo-editing apps. It comes bundled with Corel's Painter Classic and Adobe's Photoshop LE. (See our review, this issue, p57.)

Photo-Objects 50,000 Volume II (Hemera Technologies, www.hemera.com, $99.99) With 50,000 32-bit images, your favorite artist will have a wealth of photographic images for graphics, Web, presentation, and word-processing programs.

IN the STUDIO with Wild Brain

Star-Studded Animation for the Movie Rat Race

Wild Brain created this basic Wayne Knight puppet in Photoshop for animation in After Effects.

When San Francisco–based animation studio Wild Brain (www.wildbrain.com) created the opening credits for Paramount Pictures' *Rat Race*, it faced two constraints: a $200,000 budget (modest by Hollywood standards) and a dearth of photo resources to showcase the movie's all-star cast, which included Whoopi Goldberg, John Cleese, and Cuba Gooding Jr. So Wild Brain's team of seven Mac artists turned to ten G4s to create a 3.5-minute animation that reflected the offbeat comedy (about high-rolling gamblers betting on a six-person race to recover $2 million) while retaining a Hollywood feel. We talked to Wild Brain director Julia Tortolani and technical director Eric Schweickert to find out how they did it.—*NR*

PHOTOGRAPH COURTESY OF WILD BRAIN

(From left to right) Wild Brain director Julia Tortolani, technical director Eric Schweickert, and Photoshop artist Kevin Bell can tell you that animating comedy is serious business.

Celebrity Puppets

At the heart of the *Rat Race* opener are 13 digital puppets of the movie's celebrity cast. The puppets are photo-collage caricatures, which hinge at the joints to give them a playful yet smooth movement as they run, drop, and swing along the title credits. The animated puppets display a wide array of poses and gestures, which artists painstakingly created in Photoshop. Wild Brain artists took just four photographs of Whoopi Goldberg and, by tweaking her eyebrows, eyeballs, and mouth pixel by pixel, gave her about 12 different facial expressions.

Celebrity Bodies

Surprisingly, the puppets' bodies were not always those of the actual celebs but occasionally the clothing and body parts of the Wild Brain staff. It's not that the stars weren't attractive; it was that Wild Brain didn't have enough photography to animate the stars properly with their own bodies. For example, Tortolani photographed Schweickert, who put on a delivery uniform and stood in as Wayne Knight's body. Wild Brain took hundreds of photographs of hands, feet, torsos, and legs and literally built the characters one piece at a time, creating complex Photoshop files, which sometimes required up to 45 layers.

The Animation

Once Wild Brain completed the puppets, the artists put the animation together in After Effects 5.0, which rendered out the 4,000-plus frames to 100GB of Cineon files, a format required to output to film. During the project, Wild Brain chose to upgrade from After Effects 4.1 to After Effects 5.0 for two main reasons: First, Version 5.0 offers better layer parenting, which defines a parent-child hierarchy between layers and nested composites to save a great deal of time when animating the hundreds of layers in a character's library of body parts. Second, Wild Brain liked version 5's 3D cameras, which permitted creation of true z-space (3D) depth and lighting.

To the left of John Cleese is Paramount's live-action shot. To the right is Wild Brain's digitally constructed scene. Can you tell the difference?

The Transition

The hardest part of the project was building what you can't see: the seamless transition between Wild Brain's animation and the actual live-action shots of the Paramount movie. Wild Brain needed to match the color and blend the movement of their digital animation footage with the live-action film footage of the actors running around a movie set. For this, Wild Brain used After Effects 5.0's new 16-bit color support. To match color, Wild Brain had the film frames of the actual movie scanned as 10-bit Cineon files, which the artists imported into After Effects. Once in After Effect's 16-bit color space, artists matched character and background colors to the film's color and then rendered the animation out to Cineon files.

Favorite Tools

Hardware

- Dual-processor Power Mac G4/450, Mac OS 9.0, 1GB RAM, 20GB internal hard disk space
- Nikon Coolpix 990 (Nikon, www.nikon.com, $799)
- 60GB LaCie External FireWire drive (LaCie, www.lacie.com, $299)
- Apple Cinema Display (Apple, www.apple.com, $2,499)

Software

- Photoshop 6 (Adobe, www.adobe.com, $609)
- After Effects 5 Production Bundle (Adobe, www.adobe.com, $1,499)
- Illustrator 8 (Adobe, www.adobe.com, $399 for version 10)

For the Kid

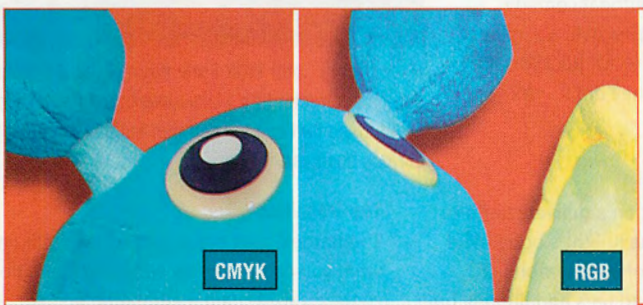
Mia: Just in Time (Kutoka Interactive, www.kutoka.com, $19.95) In this edutainment title, Mia uses time travel and brainpower to keep her house from burning down. Bonafide kids (of all ages) will be cheering for Mia by the end.

Who Wants to Be a Millionaire, Kids Edition (Disney Interactive, www.disneyinteractive.com, $19.99) This is the ultimate in pop-culture fluff for kids ages 8 to 13, with questions about *Dawson's Creek* and the Backstreet Boys. Hey, the little tykes can't *always* be watching public television.

The Wide World of Color

by Narasu Rebbapragada

All whites are not the same. The same goes for blacks, blues, greens, and purples. The colors in your digital photography, Web graphics, and printed designs are composed differently because they use varying *color models*, the strangely named systems of color classification and creation. Let us introduce you to a few color models, what they are, and when you should use them.



RGB

The RGB (Red, Green, Blue) color model lights up video images and graphics displayed on monitors. Every image is composed of a value (1 to 255) of the three colors. This color model is additive—this means red, blue, and green mixed at their maximum values (255) emit their greatest light, which is white.

Who uses it? Web designers. The gamut (range of colors) of colors in RGB is greater than in CMYK, so you should create Web images in RGB to take advantage of the full range of colors. When you convert RGB images to CMYK, you will lose extra RGB data, and some colors will appear duller.

Grayscale

This model contains 256 shades of gray. Shade 0 is black, and shade 255 is white.

Who uses it? People who want to create black-and-white images. Duh...

Duotone

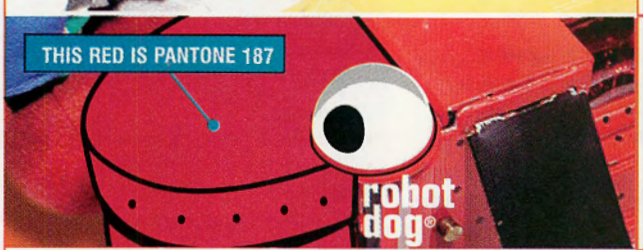
Traditionally, a duotone is a black-and-white photograph printed using black plus one additional ink color. In desktop publishing, it's a grayscale image enhanced with an additional color.

Who uses it? Designers and photographers looking for a richer tone than grayscale can provide. Many printer inks can't accurately represent all 256 shades of gray. Adding the second color gives you a richer tone.

CMYK

This is the color model you use to create a printed page. With CMYK (Cyan Magenta Yellow and blacK), every image is composed of varying percentages (0 to 100) of the four colors. This color model is subtractive, which means that when you mix cyan, magenta, yellow, and black together on paper at 100 percent, they absorb light and appear black.

Who uses it? Print designers. When printing to inkjet or professional-level printers, you—or your printer's driver software—must be able to separate your graphics into these four colors.



Pantone

The Pantone Matching System is a system for choosing and precisely controlling ink colors. Designers pick numerically designated colors from a fan-shaped book of swatches, which show exactly how the colors will print on coated and uncoated paper stocks.

Who uses it? Designers who create corporate logos and other graphics that must look exactly the same when printed on different media.

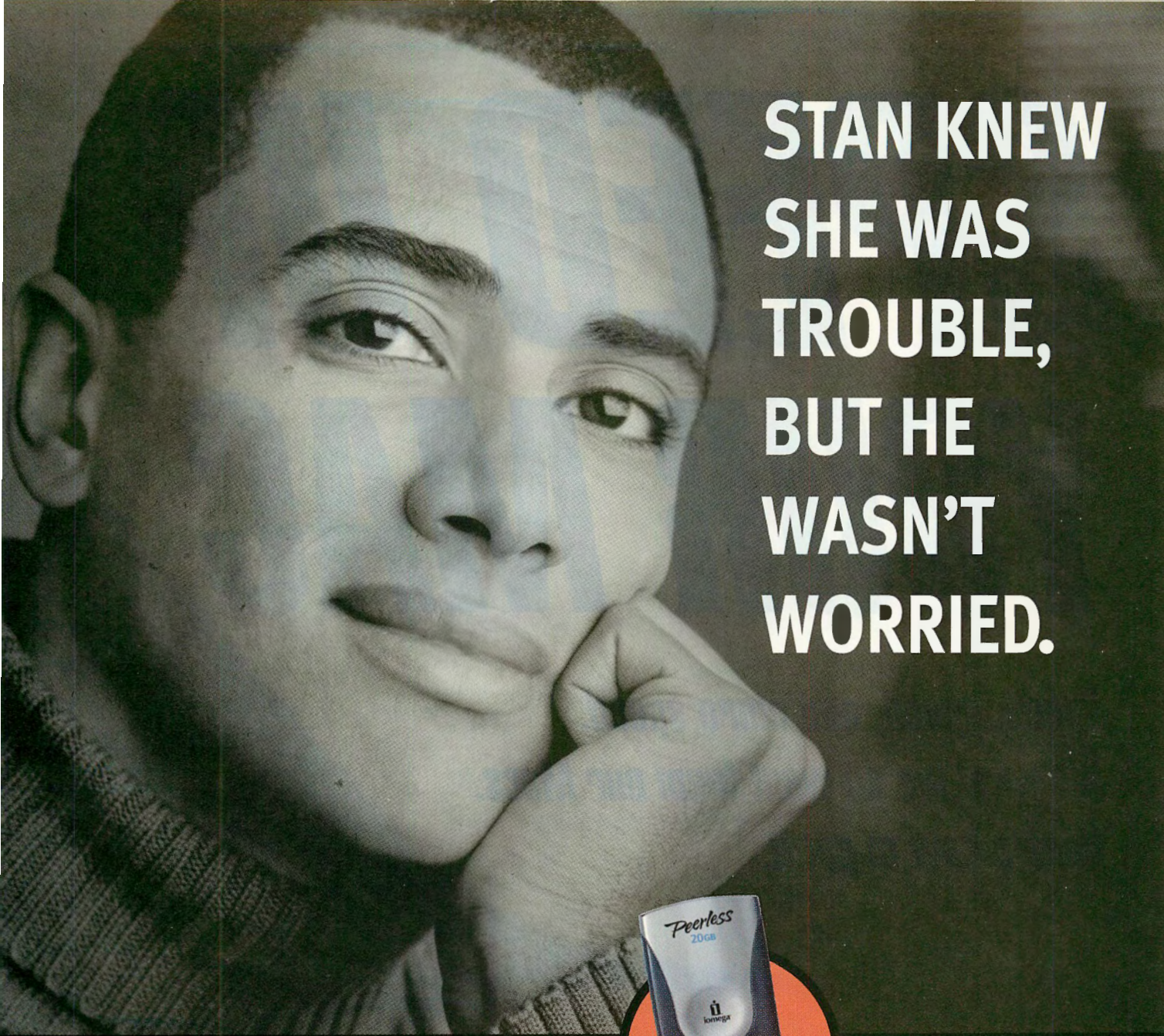
Web-Safe Colors

Web-safe colors are a set of 216 RGB colors that look the same when displayed on different platforms and different browsers.

Who uses it? Web designers who want to ensure that their graphics won't look *dithered*, a fuzzy look created when a monitor tries to approximate a color by mixing dots of two other colors.

PHOTOGRAPH BY W. B. JONES

Note: We simulated all color models in CMYK, required by *MacAddict*'s printing process.



STAN KNEW SHE WAS TROUBLE, BUT HE WASN'T WORRIED.

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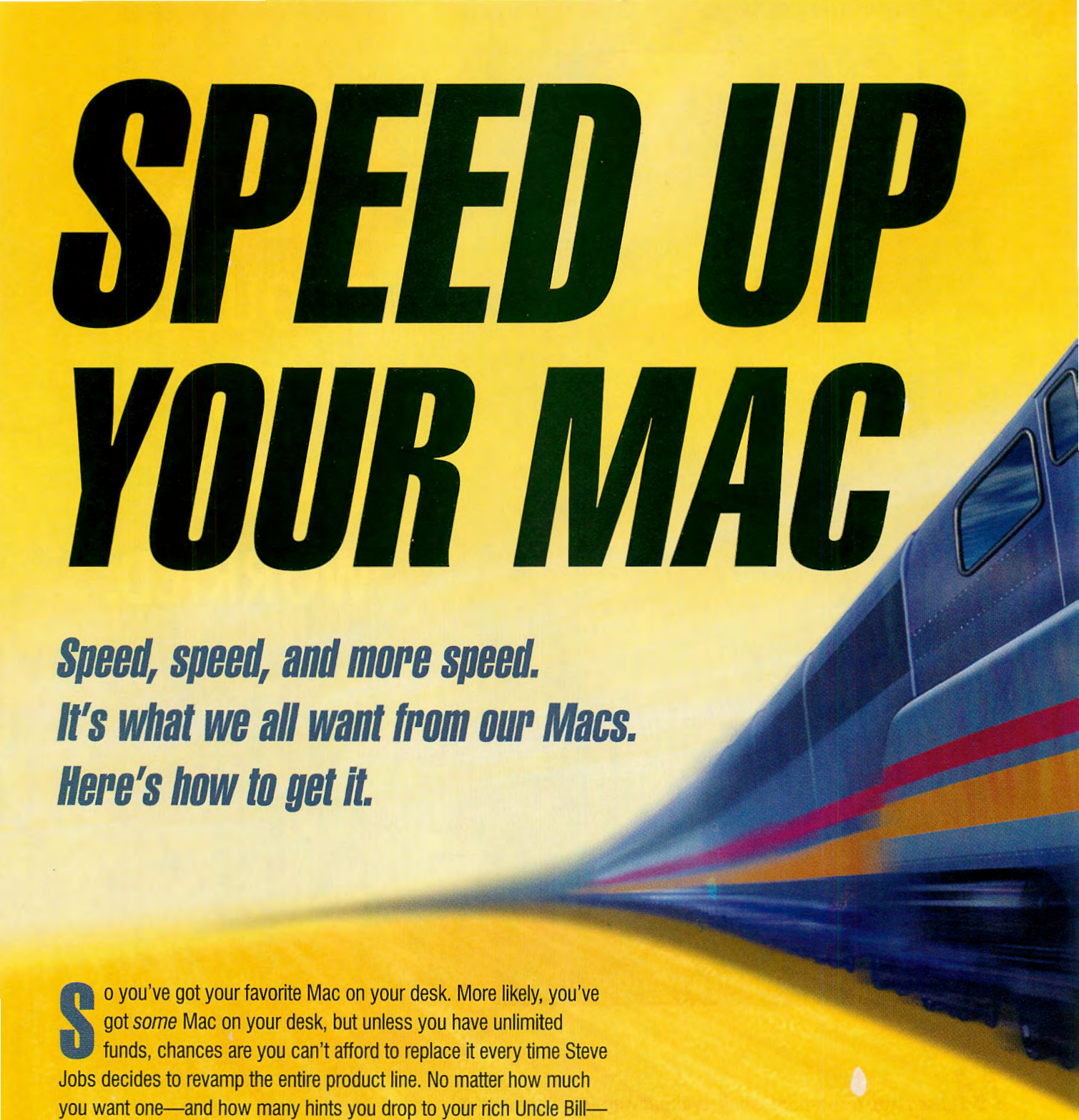
SPEED UP YOUR MAC



Speed, speed, and more speed. It's what we all want from our Macs. Here's how to get it.

So you've got your favorite Mac on your desk. More likely, you've got *some* Mac on your desk, but unless you have unlimited funds, chances are you can't afford to replace it every time Steve Jobs decides to revamp the entire product line. No matter how much you want one—and how many hints you drop to your rich Uncle Bill—an 800MHz Dual-processor G4 just isn't in your future.

But that doesn't mean faster performance isn't in your future. Your Mac should blast off at lightning-fast speeds every time you click that mouse. You shouldn't have to wait for your Mac—it should wait for you. And with the right enhancements, it will. From the smartest hardware upgrades to the sneakiest software tweaks, we tell you how to get the best performance possible from your Mac. Anyway, you didn't *really* want that Dual 800, did you?

by Dave Hamilton
illustration by Tony Randazzo

Find Graphic Converter 4.0.9 PPC, TinkerTool 1.5.2, an Adobe Photoshop 6.0 tryout, a Launch Bar 3.0 demo, and Xoptimize 0.42 on The Disc.

HARDWARE

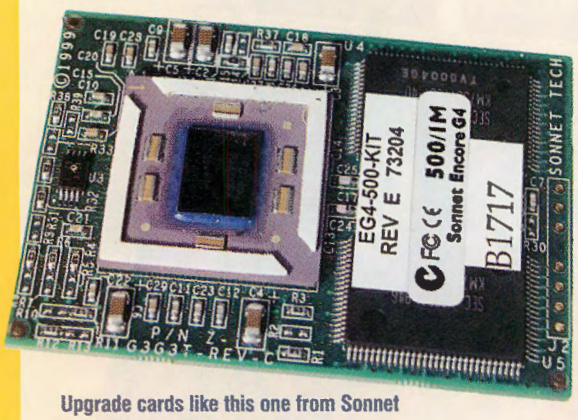
You can optimize the software that runs on your machine all you want, but the crux of the matter is that your hardware ultimately sets a limit on what you can do with your Mac (assuming you aren't typing with your nose, that is).

Upgrades, upgrades, upgrades—or try a little bit of hacking.

Upgrade the Processor

You can swap in faster processors on most Macs, with the exception of the newest laptops and G4s. Apple itself doesn't offer processor upgrades, but companies like Sonnet Technologies (www.sonnettech.com), PowerLogix (www.powerlogix.com), and XLR8 (www.xlr8.com) do.

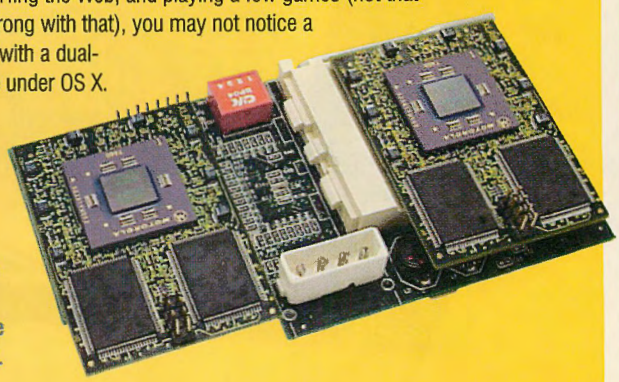
Bear in mind, though, that the type of motherboard you have limits your Mac's bus speed. Therefore, if you upgrade your G3 to a 500MHz G4 processor, it won't run as fast as, say, a 500MHz G4 tower that came straight from the factory. The difference lies in the computer's bus. Data goes from system memory to the processor and back to memory again via the bus. If your machine has a maximum bus speed of 66MHz, it can't perform this function as fast as Apple's latest machines—those models' busses run at 133MHz.



Upgrade cards like this one from Sonnet can make your Mac run a little more like that 867MHz G4 you're coveting.

Time to Dual?

Companies like Sonnet and XLR8 offer dual-processor upgrades—but whether you should buy one of these lovelies comes down to what you do with your computer. Mac OS 9 supports just one processor, so the only time your Mac will utilize the second processor is when you are running an application specifically designed to support multiprocessors, such as certain Adobe Photoshop filters and Apple Final Cut Pro. With Mac OS X, the rules are different. Carbon or Cocoa apps written to support Mac OS X automatically take advantage of dual processors. Still, if all you're doing is sending emails, surfing the Web, and playing a few games (not that there's anything wrong with that), you may not notice a huge speed bump with a dual-processor upgrade under OS X.



A dual-processor upgrade card like this XLR8 one can make a big difference if you're running Mac OS X.

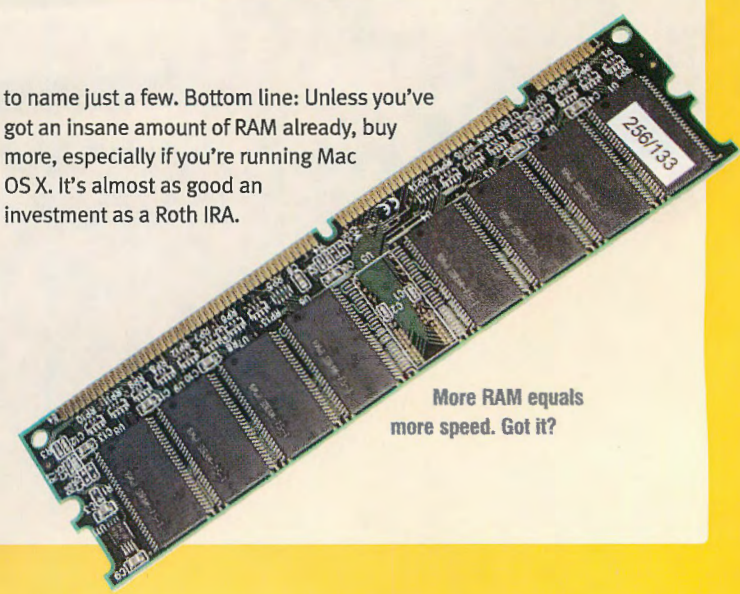
To G3 or G4? That Is the Question

For most G3 machines, you can choose either a faster G3 or a G4 upgrade. A G3 is fine for a lot of folks, but there are good reasons to consider a G4. For instance, the G4 has an on-chip Altivec coprocessor (also called the *Velocity Engine*). This extra power allows the machine to execute as many as four floating-point calculations in a single cycle, whereas most processors can only perform one at a time. These calculations are especially important for voice, graphics, and video applications. More and more apps take advantage of the Altivec processor these days—Photoshop, Final Cut Pro, and DVD Studio Pro, to name a few. Also, Apple is touting Mac OS X as optimized for the G4 processor.

Pump Up the RAM

The introduction of Mac OS X with its Unix-based roots makes RAM more important than ever. As a general rule, the more RAM you have, the faster a Unix-based machine will run. That's because the more RAM you have, the more data your Mac can cache. RAM makes an even bigger difference in a server-type environment, where you're running one application that serves many simultaneous requests.

The minimum requirements for Mac OS X are 128MB of RAM, though you'll want at least 256MB to realize the full potential of this system, especially if you're running applications in Classic (Mac OS X's environment for running OS 9 programs under OS X). Online RAM vendors are the best place to buy memory because they can keep up with the almost daily changes in today's RAM market. There are many great online RAM sellers, including Memory To Go (www.memorytogo.com), Ramjet (www.ramjet.com), and MemoryX (www.memoryx.net), to name just a few. Bottom line: Unless you've got an insane amount of RAM already, buy more, especially if you're running Mac OS X. It's almost as good an investment as a Roth IRA.



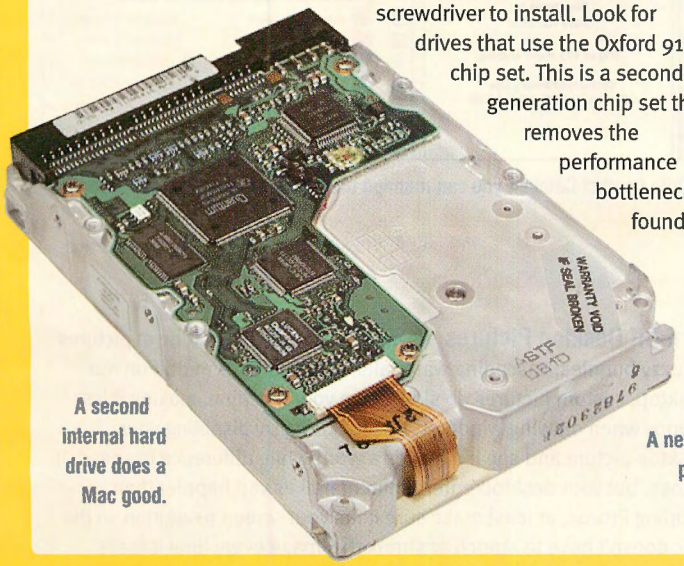
More RAM equals more speed. Got it?

Get a Good Hard Drive

Most Macs come with respectably fast drives, so there's no reason to replace or add a drive unless you simply need more storage space. If you do add a drive to your Mac, though, you might as well get a speedy one.

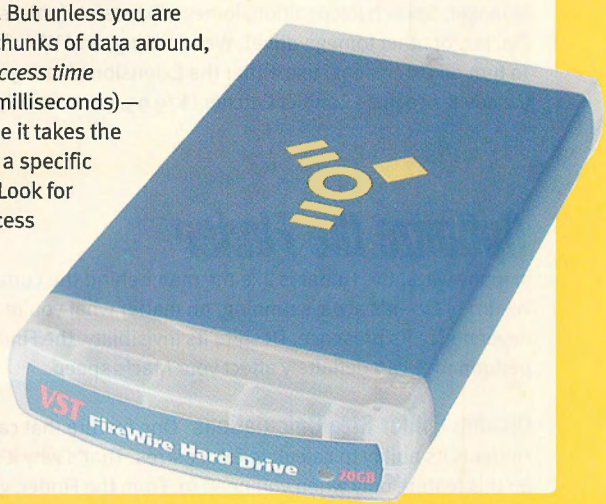
First, choose between adding a drive inside your Mac, or connecting one to your FireWire port externally (that is, if you have FireWire). For internal drives, your options are wide open, since Macs now use the same IDE drives that Wintel machines do. Look for drives from reputable manufacturers like Western Digital (www.westerndigital.com), IBM (www.storage.ibm.com/hdd), and Seagate (www.seagate.com).

An external FireWire drive is worth considering. You can move it from Mac to Mac, and it doesn't take a screwdriver to install. Look for drives that use the Oxford 911 chip set. This is a second-generation chip set that removes the performance bottlenecks found in most other FireWire drives, resulting in faster access to your data. You can find out if a drive uses the Oxford 911 chip set by looking at the technical specifications listed on the manufacturer's Web site or by asking the company directly. For external hard drives, vendors such as Firewire Direct (www.firewiredirect.com) and VST Technologies (www.vsttech.com) are good places to check.



A second internal hard drive does a Mac good.

Believe it or not, hard drives vary greatly in speed. The general rule to follow is that the newer the drive, the faster it is. Be aware that although manufacturers often measure hard drive performance in *rotational speed* (5,400 RPM, 7,200 RPM), a faster RPM doesn't necessarily mean faster speeds in day-to-day usage. Rotational speeds are more important with video- and audio-editing apps, where you're moving large chunks of data on and off the drive. Generally, a drive with a faster RPM can sustain a faster data-transfer rate over a long period of time. But unless you are moving huge chunks of data around, focus on the *access time* (measured in milliseconds)—that is, the time it takes the drive to locate a specific piece of data. Look for drives with access times of 9ms or less.



A new FireWire hard drive provides more storage space and can offer speedy performance.

Overclock Your Mac

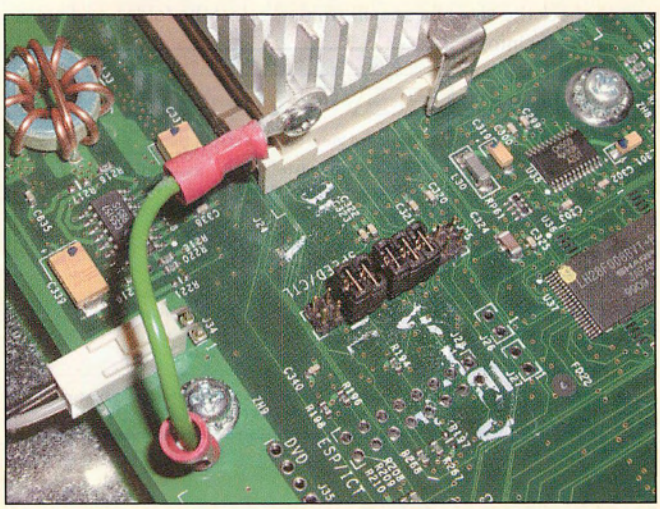
Overclocking is the somewhat illicit process of making your Mac run faster than Apple designed it to. This usually involves changing settings on the motherboard, and sometimes even means soldering on or removing components. While some Macs are easier to overclock than others, you can overclock most of them (depending on how willing you are to try untested, risky techniques!). Below we point out several Web resources that tell you how to overclock different models. Bear in mind that neither we nor the authors of these Web sites guarantee that these techniques will work. Overclocking will certainly void your warranties with Apple and all the related hardware vendors, including CPU upgrade card and RAM manufacturers. Now that we've covered our butts, read on.

G3 Check out "10 Things You Don't Know How to Do (and Probably Shouldn't)" on p26 of our April 2001 issue.

867MHz G4 Some enterprising soul has found a way to speed a 867MHz G4 to over 1GHz. Check out www.bekkoame.ne.jp/~t-imai/g4de1.html for more information.

2001 iBook The folks at Accelerate Your Mac (www.xlr8yourmac.com) recently published an article on overclocking the latest iBook. Read about it at www.xlr8yourmac.com/systems/ibook_2001_overclock/ibook_2001_overclock.html.

iMac This all-in-one Mac has always been a tough machine to overclock, but there are ways. If you're game to give it a try, check out www.thelittlemacshop.com/imac/imacmod1.html. You should also check out the Clock Chipping page at http://socrates.berkeley.edu/~schrier/mhz.html for general advice on overclocking. It offers links to information about nearly every type of Mac and shows you what it takes (aside from nerves of steel) to make the required modifications.



We overclocked this 400MHz G3 to run at 450MHz by changing around the jumper settings. Impressive, eh?

MAC OS 9

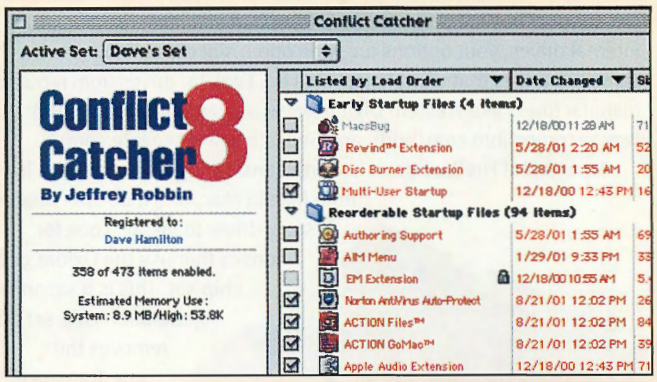
Even though Apple is trying to convert the masses to Mac OS X, for now many of us are sticking with the trusty Mac OS 9, thanks very much. Since the original Mac OS has been around since 1984, there's no shortage of ways to optimize your system for speed. If you're a Mac veteran, you probably know most of these tricks, but you still might learn a thing or two.

A few nips and tucks can make Mac OS 9 a speedy little devil.

Manage Your Extensions

The dreaded Extensions folder—it's the one place on the Mac where no sane soul ever wants to venture. Yet one of the most effective ways of speeding up your Mac is to trim down your extensions. The Mac OS ships with quite a few extra ones that support features of Mac OS 9 most of us don't use regularly. Hello? Does anyone actually use Speech Manager?

Some good control panels and extensions to target for disabling are: Find By Content, Find By Content Indexing Scheduler, Speech, Speech Manager, Speech Recognition, Iomega Extension (unless you're running a Zip, Jaz, or other Iomega drive), Web Sharing, and Web Sharing Extension. To turn off extensions, use either the Extensions Manager control panel or Casady & Greene's Conflict Catcher ($79.95, www.casadyg.com).

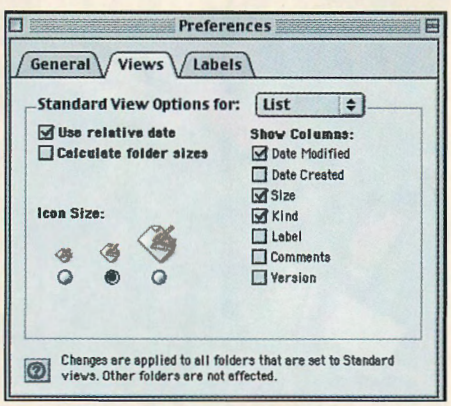


With Conflict Catcher, you can manage multiple sets of extensions easily.

Optimize the Finder

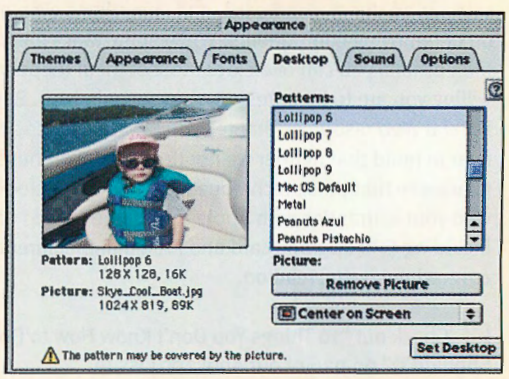
In many ways, the Finder is like the man behind the curtain in *The Wizard of Oz*—it's always running, no matter what you're doing, but you never notice its presence. Despite its invisibility, the Finder's performance can definitely affect your Mac's speed.

Disable Folder Size Calculations One feature that can tie up the Finder is its ability to calculate folder sizes. That's why it's best to turn on this feature only when you need to. From the Finder, go to Edit and choose Preferences. Go to the Views tab and choose List from the pull-down menu; you'll see a check box for Calculate Folder Sizes. Uncheck that box to tell the Finder not to calculate folder sizes by default. If you need to check the size of a specific folder, select the folder, and press Command-I for info. Then read the size info that appears in the dialog box.



Turning off the Finder's Calculate Folder Sizes option can make your Mac snappier by eliminating the background task of crunching data.

Turn Off Desktop Pictures As much as we all like staring at pictures of fuzzy bunnies, cascading waterfalls, or Madonna's midriff on our desktop, custom pictures do slow down your machine, making it less snappy when drawing windows. Just for kicks, try disabling your desktop picture and see if it makes a worthwhile difference in speed. If it does, but your desktop entertainment makes you happier than popping Prozac, at least make sure it fits your screen resolution so the Mac doesn't have to stretch or shrink the image every time it loads. Apps like Lemke Software's Graphic Converter ($30, www.lemkesoft.com) or Photoshop ($609, www.adobe.com) make resizing images simple. Also, in the Appearance control panel select Center On Screen (instead of Place Automatically). This option keeps the image at its normal size, whereas Place Automatically often forces the system to stretch the picture.



Setting the Appearance control panel to Center On Screen keeps the processor from having to redraw the background image.

Upgrade to the Latest

Apple recently released Mac OS 9.2.1, and if your Mac can run it (it only runs on Macs certified to run Mac OS X), it is in your best interest to upgrade. Not only is it more stable than previous releases of Mac OS 9, but it also boots a lot faster (our 400MHz PowerBook G3 Pismo booted twice as fast as in Mac OS 9.1!). You can download the update from Apple's Web site (http://docs.info.apple.com/article.html?artnum=120030). The software is free, but Apple wants your soul (aka your personal info) before it will allow you to grab the download.

Upgrading to Mac OS 9.2.1 *should* result in increased speed and stability.

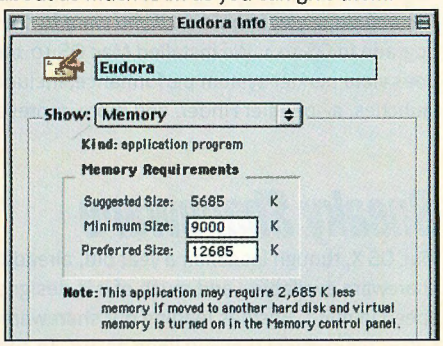
Don't Forget Memory

Let's face it: Mac OS 9 has a strange (some might say stupid) way of managing memory. Still, you can use this stupidity to your advantage by playing with memory settings.

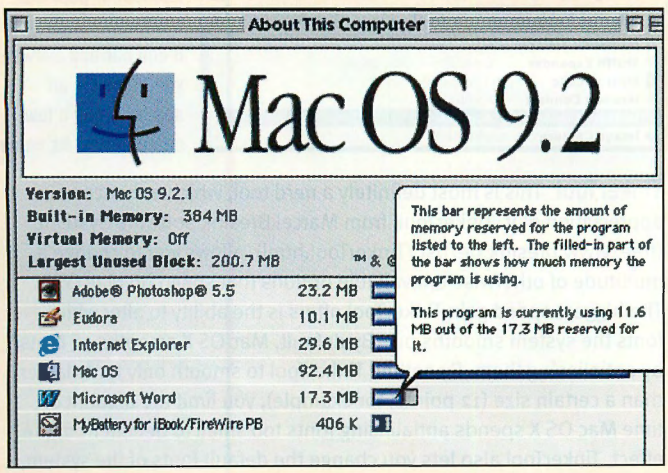
Set Application Memory One of the strangest parts of Mac OS 9 is the fact that users can control how much memory a specific application gets at any one time. Mac OS 9 then sets aside that chunk of memory as users launch each application. If an application only needs 2MB of RAM, but you've set it to use 100MB, it will reserve that 100MB of RAM when it runs and will keep other applications from using the other 98MB—kinda like a two-year-old who won't let anyone else touch his toy truck even when he's not playing with it.

Although you can't fix the idiocy of Mac OS 9, you *can* allocate memory more accurately. First, open the application in question. From the Finder, go to the Apple menu, and choose About This Computer. That will bring up a list of all the applications running on your Mac. Go to the Help menu and choose Show Balloons. Now float the mouse cursor over the bar graphs to the right of each application to see how much of its allocated RAM the application is actually using.

Now it's time to fix your memory allocation. Quit the application, find its icon (not its alias), highlight it, and navigate to the File menu, then Get Info and Memory. In the resulting screen, you should see three memory sizes listed. The first is Suggested Size. This is what the author of the software suggests as its optimal preferred RAM setting. The second item listed is Minimum Size. If the app doesn't find at least this much RAM available, it will refuse to launch. The last setting is Preferred Size—this is the maximum amount the system will allocate, assuming the RAM is available. This is the number you'll want to adjust. As a general rule, email programs and Web browsers should benefit from increased RAM (especially if you have lots of messages and bookmarks to manage). Design applications like Photoshop and PageMaker will use just about as much RAM as you can give them. Most other apps, such as QuickTime Player and iTunes, can manage pretty well with their suggested RAM.

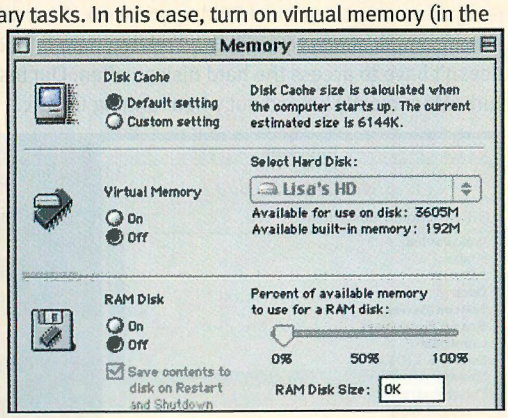


With Eudora, increasing the memory allocation will allow you to store more messages in your Inbox and Outbox.



Get detailed information about the memory your apps are hogging. We knew there was some useful reason for Balloon Help's existence.

Avoid Using Virtual Memory Virtual memory allows your computer to tap available space on your hard drive in lieu of using RAM to store data. In theory, the computer intelligently manages the contents of RAM, swapping out unused or unneeded bits to the hard drive and freeing up RAM for more immediate concerns. In more modern operating systems (like Mac OS X and even later versions of Windows), virtual memory is a core component that can dramatically improve performance, allowing the computer to manage memory at peak efficiency. However, with Mac OS 9, virtual memory is not part of the core OS and is best avoided unless you simply don't have enough RAM to handle necessary tasks. In this case, turn on virtual memory (in the Memory control panel)—then go out and buy some RAM so you can turn off virtual memory for good.



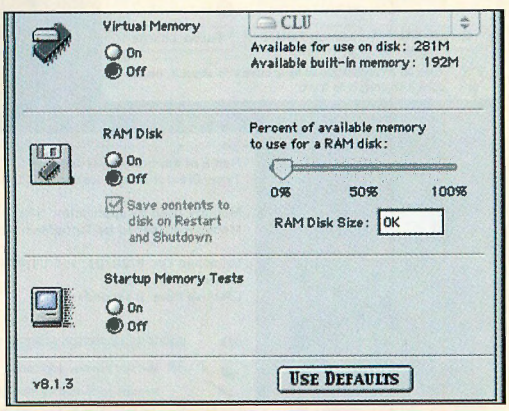
Disable virtual memory to make Mac OS 9 run better.

Speed Your Startup

There are a few ways to give your Mac a nice adrenaline shot when booting up.

Try Startup Doubler Marc Moini's Startup Doubler shareware ($20, www.marcmoini.com/StartupDoubler.html) builds a large cache of all the data required to load your extensions at startup. When your computer starts up again, it reads this data from the cache instead of from each individual extension. If you have lots of extensions and/or a slower Mac, this software can greatly reduce your startup time. However, if you constantly change your extension sets, Startup Doubler has to reconfigure itself each time you alter them and may not help much.

Disable Memory Checks Each time your Mac starts up, it checks your RAM to make sure everything's kosher. To save time, turn off these tests by holding down Command and Option as you open the Memory control panel. At the bottom, select the Off button under Startup Memory Tests. (Be aware that if you do this, your Mac won't recognize bad memory.)



Hold down Command and Option while you open the Memory control panel to turn off Startup Memory Tests.

MAC OS X

If you're ready to install Mac OS X (or maybe you already have), your computing life is going to change in many ways. OS X still looks like a Mac, kinda. It still acts like a Mac, kinda. But underneath is Unix, kinda. One thing is for certain—Mac OS X (at least for now) doesn't feel as fast as Mac OS 9. Still, you can keep OS X percolating at respectable speeds.

Give OS X the speed nudge it wants and deserves.

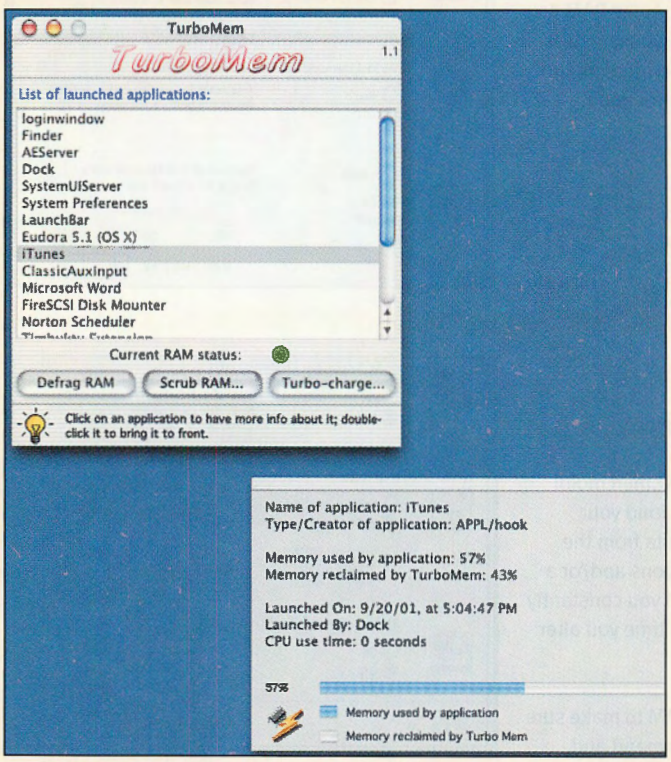
Update to Mac OS 10.1

The first thing you should do if you want to speed up Mac OS X is upgrade to OS 10.1. We installed Mac OS 10.1 and indeed this upgrade does yield perkier system performance, including faster application launches, a speedier Finder, and more impressive startup times (not to mention that OS 10.1 is just much cooler). Visit www.apple.com/macosx/uptodate for instructions on how and where you can obtain Mac OS 10.1. Then run, don't walk, to the nearest store to get this update. Now go!

Sneaky Shareware

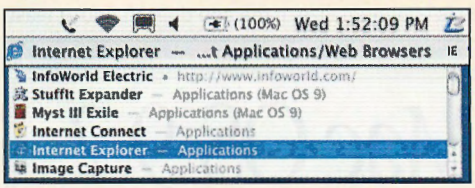
Mac OS X, though less than a year old, already has a vast library of shareware available—and much of it is designed with your need for speed in mind. Besides reading our shareware recommendations below, we suggest that you keep an eye on sites like VersionTracker (www.versiontracker.com/macosx) to see what new stuff comes out every day.

TurboMem Mac OS X manages memory much differently (and much better) than Mac OS 9 ever did. One notable difference is OS X's ability to manage memory dynamically by moving applications around and freeing up space as needed. But some still feel Mac OS X doesn't take full advantage of this capability, and thankfully at least one of those folks is a talented programmer. Mac Unicorn Software's TurboMem (free, www.macunicorn.com/turbomem) constantly monitors and reorganizes the contents of RAM as you work. It can also accelerate specific applications by reading all related data into RAM so the app doesn't have to access the hard disk so often. Our tests showed that TurboMem mostly helped out when running Classic.



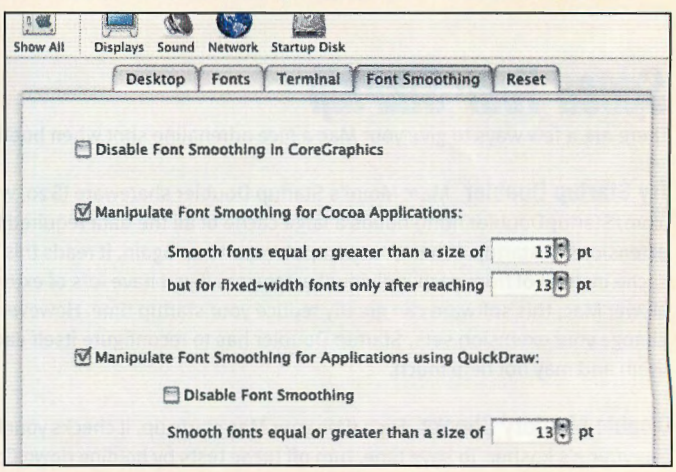
TurboMem will monitor your system and optimize memory usage by reclaiming RAM from applications that aren't using it at that moment.

LaunchBar Objective Development's very useful LaunchBar ($19.95, www.obdev.at/products/launchbar) takes inventory of all of the programs on your hard disk and then allows you to launch them by typing just the first few letters of the program's name. Not exactly Mac-like, but boy, can it speed up your search for an application you need to run! LaunchBar always runs in the background—all you have to do is press Command and Space (or another key sequence you choose), then begin typing the name of a program. It then displays a list of applications that match the characters you typed. Very cool.



LaunchBar pops out from underneath your menu bar and allows you to launch an app by typing a few characters of its name.

TinkerTool This is most definitely a nerd tool, which enhances our appreciation of it. TinkerTool, from Marcel Bresink Software-Système (free, www.bresink.de/osc/TinkerTool.html), allows you to change a multitude of otherwise unavailable options that speed up Mac OS X. The biggest speed gain TinkerTool offers is the ability to alter which fonts the system smooths out. By default, Mac OS X smooths all fonts by antialiasing them. By setting TinkerTool to smooth only fonts larger than a certain size (12 points, for example), you limit the amount of time Mac OS X spends antialiasing fonts too small to benefit from the effect. TinkerTool also lets you change the default fonts of the system, make the Terminal application transparent, and access a third minimize effect called Suck In, a combination of Genie and Scale.

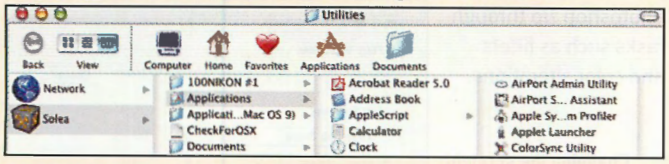


TinkerTool can speed up OS X by telling it not to bother smoothing fonts below a certain size.

Tweak the Finder and Dock

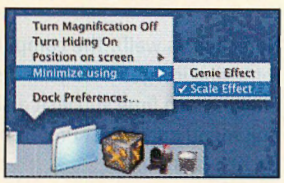
There are many ways to increase the performance of the Finder and Dock—some involve actual speed adjustments, and others are shortcuts that make you more productive while working in OS X.

• Every time you open a Finder or hard drive window, you probably need to resize the window or adjust the view to suit your preferences. How about a quick way to make those changes stick? Just click the Finder icon in the Dock or double-click your hard disk icon, make the view and size changes you want, and then immediately close the window. The system should now remember these settings for the future!



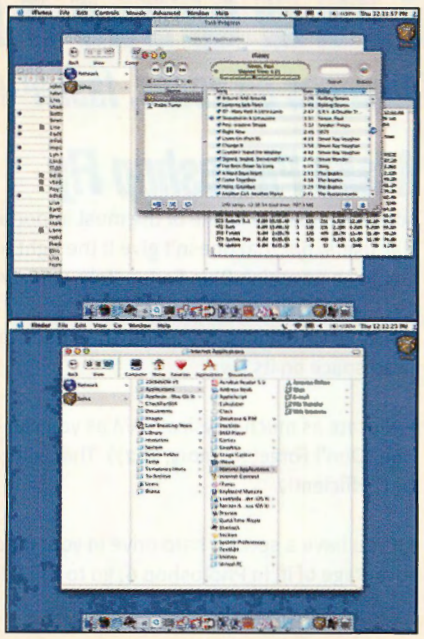
To tell OS X how you want your Finder windows to look, click the Finder icon in the Dock, set the window the way you like it, and close it.

• Mac OS 10.1 gives you the ability to alter the way the system minimizes windows when sending them to the Dock. The default effect is called Genie, and impressive though it is the first 500 times, it does slow you down while you wait for windows to finish slipping into the Dock. The Scale effect, while not as visually appealing, is much faster. To switch to Scale, Control-click the line that splits the Dock in two and choose Minimize Using Scale Effect.



Change the way windows minimize for snappier performance

• If you have lots of applications and windows open, you can hide them all and just bring one application to the front with a single click. Just hold down Command and Option; in the Dock, click the icon of the application you want to view.



If you've got a cluttered desktop (top), hold down Command and Option, click the Finder in the Dock, and you'll achieve desktop nirvana (right).

• To bring a new application to the front while hiding the last application you were working in, hold down Option and click the Dock icon for the application you want to view. Since Mac OS X allows windows from multiple applications to interleave (so you can have a TextEdit document sitting between two Internet Explorer windows even when IE is active), this is a handy way of bringing all the windows for one application to the front. This trick only works in Mac OS 10.1.

Tap the Terminal

With its Unix roots, OS X has inherited a command line that has more than 30 years of history, resulting in literally thousands of different tools you can use to monitor and adjust your system's performance. Mac OS X includes an application called Terminal (in the Utilities folder located inside the Applications folder), which allows you to access the command line.

Prebinding Mac OS X applications consist of a series of components, including *libraries*. When you run an application, OS X has to gather all of the proper libraries, pull them together, and then launch the program. This process takes time since the operating system stores libraries in many different places. *Prebinding* finds the libraries each application requires and stores them with that app to shorten its launching time. Most installers and Mac OS X updates will perform this process for you, but sometimes applications slip through the cracks. That's why performing prebinding every few weeks is a wise idea. In the command line, type `sudo update_prebinding -root /`.

You will then need to enter your password. You must log in as an administrator (or root) to run prebinding. But rather than log out and relog in as root, you can use the `sudo` command to accomplish the same thing.

```
Welcome to Darwin!
[davepb:~] daveK sudo update_prebinding -root /
Password:
2001-09-19 14:33:51.706 update_prebinding[502] Start of update_prebinding
2001-09-19 14:33:51.709 update_prebinding[502] Search system for executables/lib
raries that also need changing
```

Prebinding can speed an application's launch by grouping all the necessary components together.

Xoptimize (free, http://third.codefab.com/unsupported) can perform prebinding for you. This Aqua-based application (that is, it doesn't use the command line) by CodeFab isn't pretty, but some folks may find it a more comfortable alternative.

Top One of the most popular command-line tools, Top, allows you to see which of your running applications are hogging valuable processor time. Open Terminal and type `top`. You'll get a regularly updated list of applications. If you want to tell Top to list processor-hungry applications first, quit it by typing `q`, then type `top -u` and press Return. While Top won't speed up your system on its own, it does give you some insight into how your system runs and which applications drain the processor most. You can use this data to decide which programs you can safely run all the time and which you should quit when you're done to free up the processor.

```
/usr/bin/login (ttyp1)
Processes:  45 total, 2 running, 43 sleeping... 147 threads          14:11:36
Load Avg:  1.71, 1.58, 1.55     CPU usage:  60.3% user, 22.8% sys, 16.9% idl
SharedLibs: num =  186, resident = 24.8M code, 1.32M data, 6.38M LinkEdit
MemRegions: num = 4304, resident =  117M + 9.39M private, 89.1M shared
PhysMem:  39.5M wired,  225M active,  103M inactive,  368M used, 16.2M free
VM: 2.56G + 48.5M   13185(0) pageins, 1617(0) pageouts

  PID COMMAND      %CPU  TIME    #TH #PRTS #MREGS RPRVT  RSHRD  RSIZE  VSIZE
  365 Window Man  31.5% 11:26.72  2   459   448  2.88M  41.4M+ 42.6M+ 73.8M
  414 Terminal    23.4%  0:11.42  6   118   148  1.96M+ 7.93M+ 5.29M+ 63.9M
  478 top         13.1%  0:06.92  1    14    14   224K   308K   464K  1.37M
  462 iTunes      10.2% 26:06.76  9   132   162  5.14M  8.82M  8.56M  67.2M
```

Top allows you to see what programs are using the most processor power. Watch the idle time percentage in the upper-right corner—if it creeps below 10 percent, your system will feel sluggish and unresponsive.

FAVORITE APPS

Your machine is humming along just fine, but Microsoft Word is moving about as slowly as that banana slug in your walkway. Well, you can give your favorite apps the kick in the pants they deserve.

Raindrops on roses, faster-running Photoshop—these are a few of our favorite things.

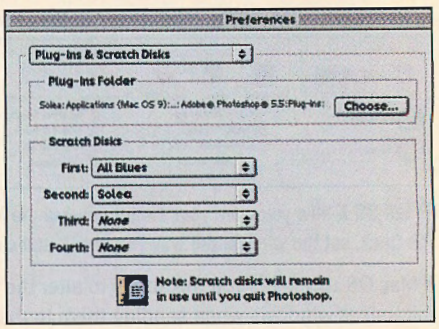
Make Photoshop Fly

Adobe Photoshop is one of the most important programs for many Mac users, but that doesn't give it the right to take its sweet time running a Gaussian Blur. Fortunately, you can help Photoshop along.

• Disable virtual memory. Photoshop does much better managing swap space on its own.

• Allocate as much physical RAM as you can spare to Photoshop (see "Don't Forget Memory," p27). That will get Photoshop running fairly efficiently.

• If you have a second hard drive in your machine, Photoshop will take advantage of it. In Photoshop 6, go to the Edit menu and select Preferences, then Plug-Ins & Scratch Disks. In the First pop-up menu, set the scratch disk to a hard disk other than the startup volume. Now just sit back and watch Photoshop zip through tasks such as filters and color alterations.



Changing the scratch-disk setting to use more than one disk allows Photoshop to operate more efficiently.

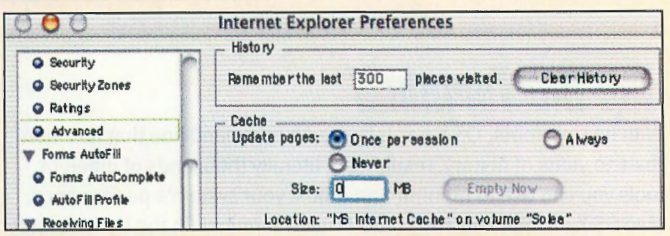
Ignite Internet Explorer

Internet Explorer 5 is a fairly solid browser, but it has some quirks. Luckily, you can speed up its performance with little effort.

• Quit and relaunch the browser every few hours. Over time, Explorer holds more information in RAM than it should, and it begins to slow down, making browsing a painful experience. Quitting and relaunching Explorer clears out all of the images and URLs stored in RAM and gives the app a fresh start.

• Try not to leave more than one browser window open for long periods of time. Explorer spends a lot of time managing the data in open windows (even once they're finished drawing), so closing unneeded windows will give you back some juice.

• If you are one of the lucky ducks who's got a broadband connection, you don't need to use Explorer's disk cache anymore (this is true of Netscape as well). The computer spends more time saving and retrieving images from your disk cache than it does if it just downloads images each time you visit a site. To head off the problem, go to the Edit menu and select Preferences. In the Advanced section, set your cache size to 0.

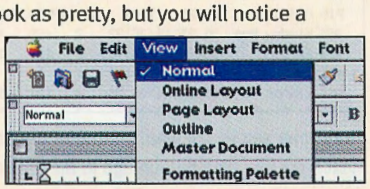


If you have an ISDN or faster connection, set the browser cache size to 0. This will tell the browser to retrieve documents from the Web with each page view, reducing traffic to and from the disk.

Bolster Microsoft Word

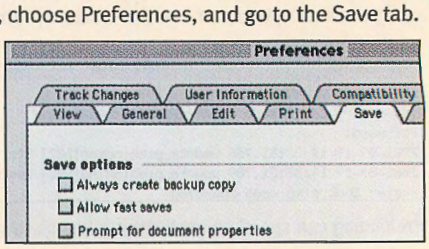
No question about it: Microsoft has spent a great deal of time and effort ensuring that the Mac flavor of Microsoft Office runs as efficiently as possibly. Nevertheless, Word still needs some help. Sure, maybe these are no-brainers, but can't we all use a reminder once in a while?

• Use the Normal view whenever possible. Word offers many ways of viewing your documents while editing them. Page Layout view allows you to see words and images in your document exactly as they will appear on the page, but it can slow you down, especially if you're scrolling through a document. Go to Word's View menu and choose Normal. Your document won't look as pretty, but you will notice a boost in speed.



By setting Word to the Normal view, you save some processor cycles and increase your scrolling speed throughout your document

• Disable Fast Saves. Don't let the name fool you: Fast Saves isn't as fast as it sounds. Word has two ways of saving a document. Normal replaces the entire contents of the existing document every time you save. Fast Save merely appends the changes you've made to the document, but leaves all of your old (and deleted) text in the file. If you've been working on a file for some time, Fast Saves can make saving and opening files take longer, since Word has to parse through the entire file to find out what should stay and what should go. In Word 2001, go to the Edit menu, choose Preferences, and go to the Save tab. Uncheck the Allow Fast Saves box.



Disabling Fast Saves in Word will decrease file sizes and potentially save time spent opening and closing your documents.

Dave Hamilton is a self-professed speed freak. He spent the last few months trying to tweak his Mac Plus to beat his G4 in Mac OS X speed trials. He failed.

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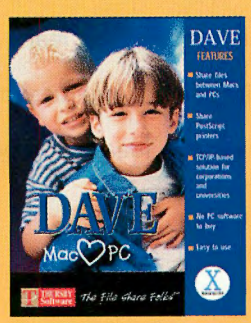

Macworld 1/2

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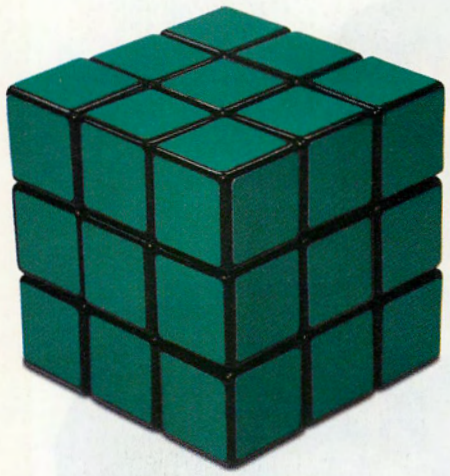

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It slices! It dices!
It **automates** the Finder,
works wonders with Word,
helps Illustrator **illustrate**,
facilitates FileMaker...

AppleScript Can Do It All!

If your Mac's so smart, why do you get stuck performing repetitive tasks all the time? Tasks like renaming files, styling text in Microsoft Word, and copying and pasting data into FileMaker. You wonder why your Mac can't do the damn work itself, but you figure you're destined to a life of repetitive stress injuries. Don't worry—you're not.

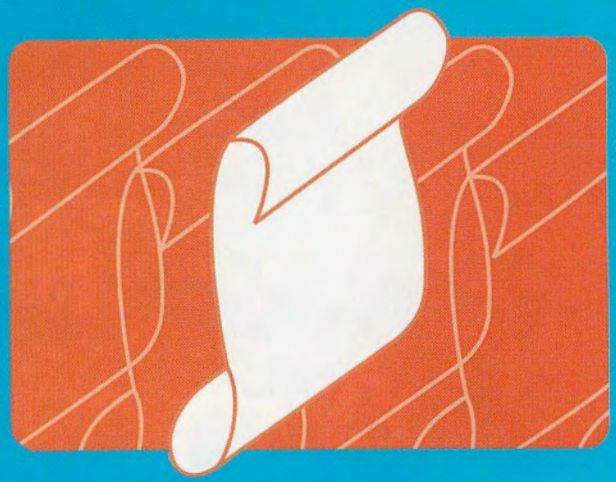
Enter AppleScript. Apple's versatile scripting language can automate a number of mundane tasks and let you restore the proper order of things—your computer does the work while you sip coffee and eat doughnuts.

AppleScript is like the guitar—simple to learn but difficult to master. The problem is that the language used to unleash AppleScript's power differs for every application that supports it: Learning to script the Finder doesn't mean you can immediately start writing scripts for QuarkXPress, AppleWorks, or any other application. Still, if you're willing, the same native intelligence that makes you a Mac user can help you learn AppleScript and its oddities—and make your system jump through hoops you never dreamed possible.

Find Math Commands 1.0, iDo Script Scheduler, and all of the scripts in this article on The Disc.

by Ian Sammis
graphics by Leslie Brown

The Anatomy of AppleScript



Before we show you how to automate tasks in apps like Word, FileMaker, and Illustrator it's important for you to understand exactly what AppleScript is and how it works.

What Is AppleScript?

Seven years ago, Apple transformed the mechanism that allows programs to respond to mouse clicks and keyboard commands—extending its powers so that it could respond to instructions sent from other apps. For example, using this mechanism, an installer could tell other applications to quit to keep them from interfering during an installation. Apple also created AppleScript, a programming language that users can employ to send instructions to applications. (AppleScript isn't the only such language, but it's the most commonly used because it comes free with your Mac's operating system.)

Say, for example, you want to create a complicated geometric figure in Illustrator—a figure that's easier to describe mathematically than to draw. If you write a script that contains the description of the figure you want to create, Illustrator can receive those instructions and create the figure (we'll show you how this is done in "Seeing Stars in Illustrator," p39). However, AppleScript instructions are frequently application specific, so you couldn't apply the same script in Photoshop.

This aspect of AppleScript is its biggest weakness—you can only use AppleScript to do as much as a particular application's developers let you. Adobe Photoshop, for example, doesn't have much built-in support for AppleScript, so you can't write very many scripts without a third-party tool like PhotoScripter. By contrast, you can do a lot of scripting in QuarkXPress—if you can perform some command in XPress with your mouse, it's a fair bet that you can do it with AppleScript. In fact, one perk that QuarkXPress 5 (in beta as of press time) will offer is inclusion of 35 prewritten AppleScripts and an easy way to run them from within the program.

The Script Editor

The key application for writing AppleScripts is the Script Editor, which comes with your Mac's operating system (in the AppleScript folder within the Apple Extras folder). When you run the Script Editor, you'll see a window like the one below (this is one of the scripts included with Mac OS 10.1). OS 10.1 comes with even more scripts than Mac OS 9 did, from Finder to Sherlock to Mail scripts. Here's what each of the windows and buttons does.

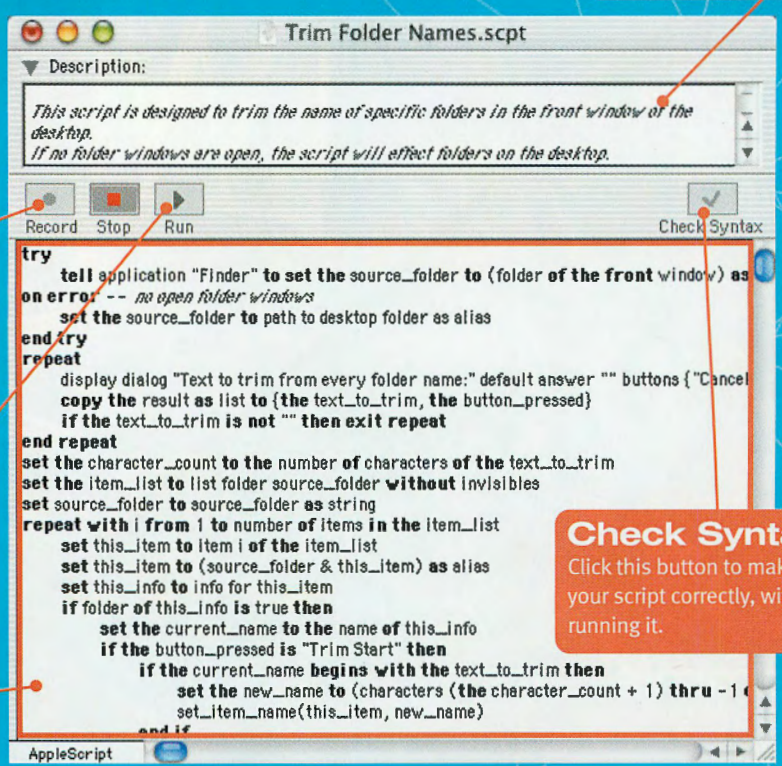
Description Area
You can type anything you want here—verses from Walt Whitman poems, love notes—but most people use this space to describe what the script does.

Record Button
Some applications, such as the Finder, let you record actions—that means if you click the Record button and proceed with an action, the app generates a script in the Script Editor to mimic that action. You probably need to edit any script you generate this way since most applications tend to either save too many instructions (right down to including irrelevant info such as window movements) or miss steps.

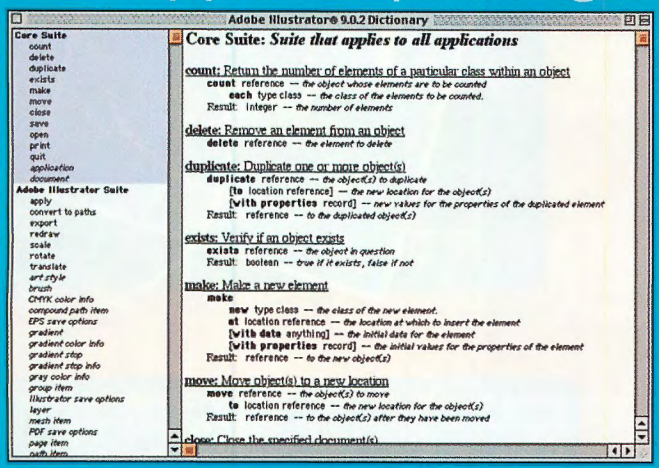
Run Button
Click this button to activate your scripts.

Script Area
Type your script here.

Check Syntax Button
Click this button to make sure you entered your script correctly, without actually running it.



The AppleScript Language



Each application's dictionary will serve as your primary reference when you're trying to control the app through scripts.

AppleScript consists of two basic pieces: the core language, which is the same regardless of which application you're scripting, and application commands, which vary from program to program. Unfortunately, the core language doesn't do much—it lets you execute instructions repeatedly, store information, and do other basic housekeeping, but you can't use it to actually write files or present dialog boxes.

Since each application responds to a unique set of AppleScript commands, you need to find out what commands it uses. Luckily for you, Apple built dictionaries into AppleScript. Choose Open Dictionary from the File menu in the Script Editor, then select the application for which you want to write a script. A list of the commands and data types your application understands will appear. Dictionaries often break up commands into suites, which include standard formats for commands issued to similar applications. For example, the text suite might provide AppleScript with definitions that would let it handle text formatting. That means a similar set of commands handles text formatting for, say, Illustrator and Word. Be careful, though—although the suites generally make scripting easier, you still run into cases where different applications implement the same concepts in subtly different ways.

Start Scripting!

When it's time to begin writing your own scripts, here are a few tips to keep in mind.

Borrow an Existing Script Even the most experienced programmers (in fact, *particularly* the most experienced programmers!) aren't averse to borrowing a bit of code to make their jobs easier. Check the archives full of AppleScripts (www.macscripter.net and www.apple.com/applescript are both good starting points) to see if you can find a script already written to do what you want.

Modify an Existing Script If you can't find a script that does exactly what you want, you might find one that performs a task that's at least similar to what you want to do, then modify it. Modifying an existing script is usually much simpler than starting from scratch and is a good way to get into scripting.

Check the Dictionary Before You Start Before you try to write a script, take a close look at the dictionary of the application in question. Sometimes it's impossible to create certain types of scripts in particular apps.

Read the Books If you want to take full advantage of AppleScript, you need a good reference book—or, since good manuals are quickly becoming as rare as the spotted owl, a good tutorial. Take a look at the Web sites mentioned above for links to some outstanding tutorials. Among the few good general books on AppleScript are Bruce Perry's *AppleScript in a Nutshell* (O'Reilly, 2001) and Danny Goodman's *AppleScript Handbook* (ToExcel, 2000).

Scripting Additions

To make useful AppleScripts, you have two options: You can either issue commands to applications or enlarge the core AppleScript language itself by installing a number of universal commands that apply to all apps. Extensions to AppleScript are called Scripting Additions, or OSAXs (Open Scripting Architecture eXtensions). Scripting Additions let AppleScript perform useful tasks without having to communicate with specific applications—once you've installed a Scripting Addition by placing it in the Scripting Additions folder of your System Folder, you can issue the commands it contains at any time.

A standard set of additions (somewhat uncreatively named *Standard Additions*) comes bundled with the Mac OS (you can find it in the Scripting Additions folder of your System Folder). You can find many other Scripting Additions at http://osaxen.com/index.php, part of the insanely useful Macscripter.net Web site. Standard Additions are tools that enable AppleScripts to perform basic functions. Here's a partial list:

say—The **say** command makes your Mac speak the text you provide in quotes using the built-in PlainTalk speech synthesizer.

set volume—The **set volume** command does just that: It sets the system volume. The command **set volume 0** turns off the volume entirely, while **set volume 7** turns up the volume to the maximum.

delay—The **delay** command forces the script to pause for the number of seconds you specify. This command has two main uses: It can pause a script to let some slow process like printing or network access finish, and it can stall a script structured as an infinite loop to keep it from unnecessarily tying up the CPU.

open location—The **open location** command is a real beauty. Just type **open location** followed by a URL, and your system will launch an appropriate application (Web browser, email program, or whatever) to handle the URL.

display dialog—The **display dialog** command is the most basic tool your scripts can use to request user input. For instance, typing **display dialog "OK to delete the file?" buttons {"Yes", "No"} default button "No"** lets you ask users to confirm their request before they do permanent damage.

choose folder, choose file, choose file name—These commands display standard file dialog boxes from a host of applications.

Finder Tricks

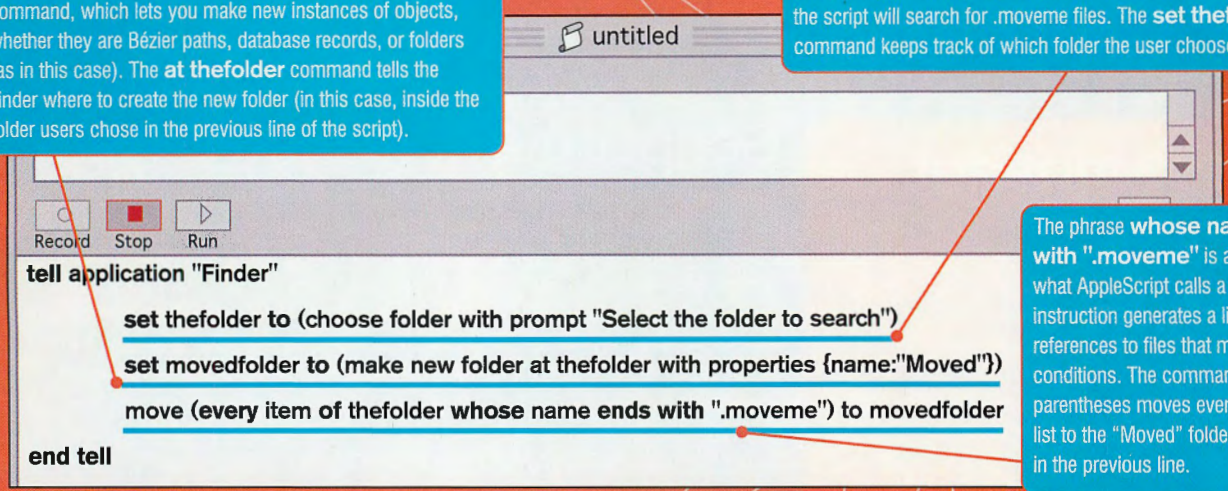
The first application most neophyte scripters attack is the Finder. One of the best things about the Finder is also its greatest weakness: Its user interface makes it very difficult to do boring, repetitive tasks like renaming files in a way that isn't boring and repetitive. AppleScript can help. Note: Scripting the Finder in Mac OS 10.1 is similar to scripting the Mac OS 9.1 Finder.

The Script

The following script written for the Mac OS 9 Finder moves all the files in a specific folder that end in .moveme into a new folder called *Moved*—useful if you generate a lot of files you don't need. Say you have a number of .hqx files on your desktop that you want to move to the Trash, you can tweak this script to do just that.

Most scriptable applications support the **make new** command, which lets you make new instances of objects, whether they are Bézier paths, database records, or folders (as in this case). The **at thefolder** command tells the Finder where to create the new folder (in this case, inside the folder users chose in the previous line of the script).

Here we nested two commands. The **choose folder** command inside the parentheses lets the user choose which folder the rest of the script will search for .moveme files. The **set thefolder to** command keeps track of which folder the user chooses.



The phrase **whose name ends with ".moveme"** is an example of what AppleScript calls a *filter*: The instruction generates a list of references to files that meet the stated conditions. The command outside the parentheses moves every item in that list to the "Moved" folder we created in the previous line.

Lights, Camera, Actions

With Mac OS 8.5, Apple enhanced the Finder so users could attach scripts to folders. Called *Folder Actions*, these scripts fire up when some predefined event takes place—for example, when you open or close a folder. Folder Actions can deal with adding and removing items and with closing, opening, or moving the folder's window. Take a peek inside the Scripts folder in your System Folder for examples of these types of scripts.

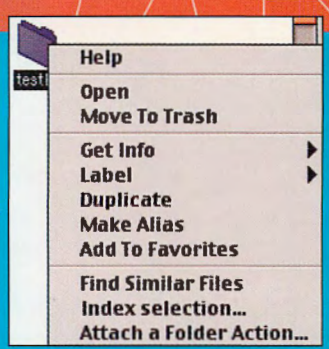
Creating Folder Actions involves two steps:

1. Write the Script

A Folder Action looks much like any other AppleScript, with one key difference: The commands sit inside a structure called a *handler*. Say what? Here's an example of a handler that would activate if you removed items from the folder:

```
on removing folder items from this_folder after losing these_items
...
end removing folder items from
```

When you remove items from the folder to which you attach this script, the Finder assigns the name *this_folder* as a way to refer to the folder; likewise, it uses the name *these_items* to refer to the items you removed.



To add a Folder Action to a folder, first bring up the contextual menu.

2. Attach the Action

In the Finder, Control-click the folder to which you want to add an action. In the contextual menu that appears, choose Attach A Folder Action. From there, select the correct AppleScript and test it out.

Be careful: Because the Finder is responsible for running Folder Actions, it has to become aware of a change to trigger a Folder Action. So the items must change in the Finder to activate the Folder Action. This means you have to leave the folder's window open if you want the action to work—a clumsy kludge. If you need to set up an automated file- or folder-processing procedure, you're better off with Sophisticated Circuits' iDo Script Scheduler ($24.95, www.sophisticated.com), which lets you run AppleScripts at designated intervals.

Get Stylin' in Word

Microsoft Word scripts tend to fall into one of two groups: those that speed up basic style changes like titling, and truly outré hacks. (We've even seen scripts that turn Word into a simple command-line interface!) Besides AppleScript, you can use Visual Basic, a built-in scripting language, to automate tasks in Office 2001's Word, and the speedier, more powerful REALbasic to automate tasks in Office v. X's Word X, which runs only on Mac OS 10.1.

The Script

Say you're writing a book, and every time you start a new section, you want to format the title text in 18-point bold. Rather than going through your manuscript and changing all of those titles to 18-point bold manually, you can build a script that does it for you. The only work required (besides writing the script) is to indicate to the program which paragraphs are titles—in this case, you need to add the text <TITLE> before the appropriate paragraphs.

BEFORE

This is paragraph 1

<TITLE>This is paragraph 2

This is paragraph 3

By typing quick text tags like this one, you can indicate to AppleScript which text you want formatted.

AFTER

This is paragraph 1

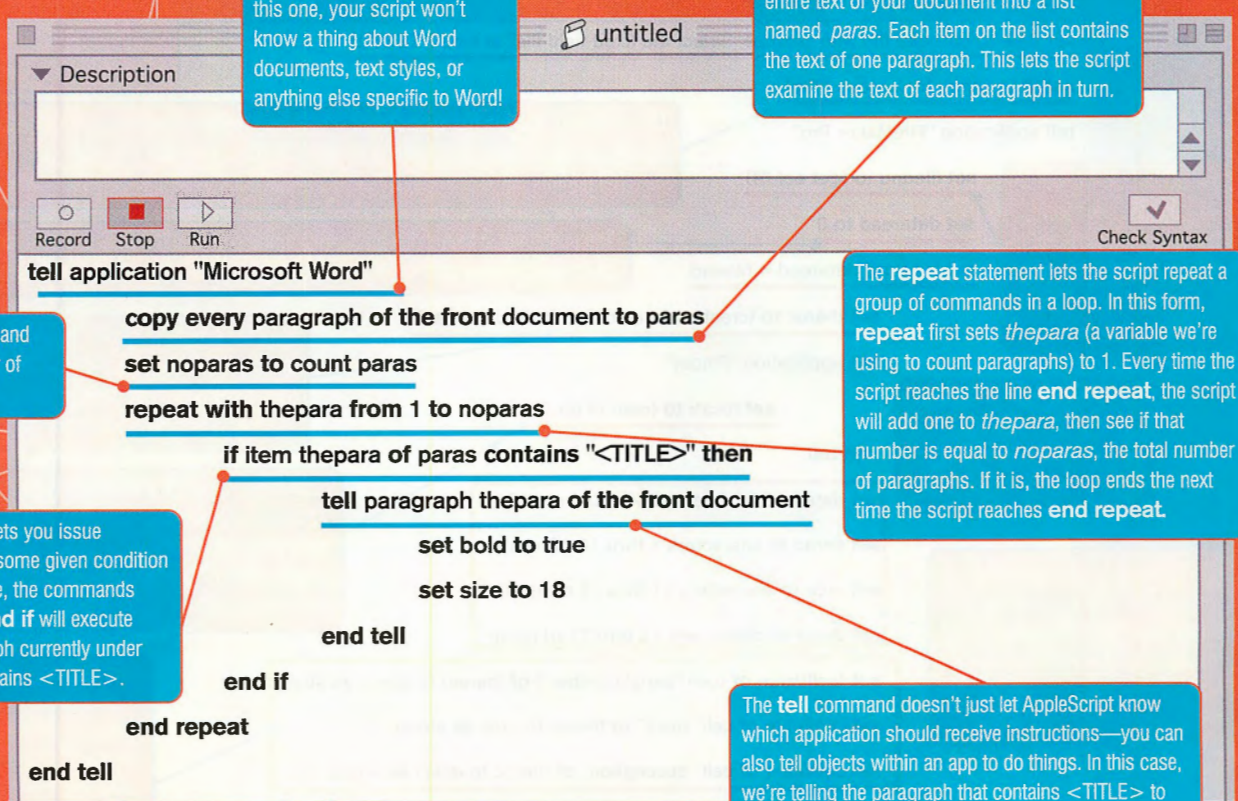
<TITLE>This is paragraph 2

This is paragraph 3

Once you've run the script, you can do a quick search-and-replace to get rid of the tags.

Without a **tell** statement like this one, your script won't know a thing about Word documents, text styles, or anything else specific to Word!

This line instructs the script to copy the entire text of your document into a list named *paras*. Each item on the list contains the text of one paragraph. This lets the script examine the text of each paragraph in turn.



The **count** command counts the number of items in the list.

The **repeat** statement lets the script repeat a group of commands in a loop. In this form, **repeat** first sets *thepara* (a variable we're using to count paragraphs) to 1. Every time the script reaches the line **end repeat**, the script will add one to *thepara*, then see if that number is equal to *noparas*, the total number of paragraphs. If it is, the loop ends the next time the script reaches **end repeat**.

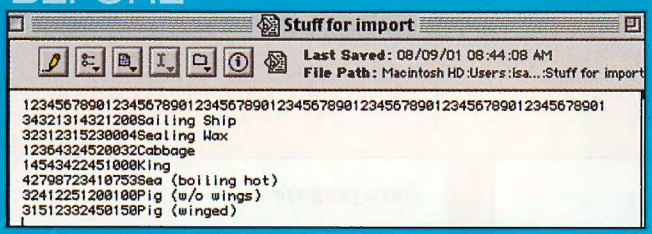
The **if** statement lets you issue commands when some given condition is true. In this case, the commands between **if** and **end if** will execute only if the paragraph currently under consideration contains <TITLE>.

The **tell** command doesn't just let AppleScript know which application should receive instructions—you can also tell objects within an app to do things. In this case, we're telling the paragraph that contains <TITLE> to change its font size and style.

Fixing FileMaker Files

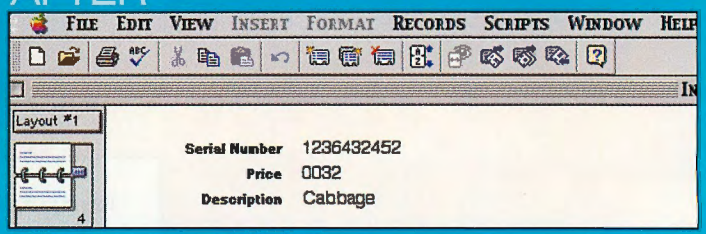
If you're a longtime FileMaker user, you've probably struggled with importing data from text files at one point or another. If your file is tab delimited, imports are easy—but what if it isn't? AppleScript to the rescue!

BEFORE



Trying to import files like these into FileMaker can drive you crazy—a script will restore your sanity.

AFTER



And here it is—our FileMaker database of inventory items.

The Script

Suppose you have an old text file that contains inventory items. Instead of containing tab- or comma-delimited data, however, the file is arranged in fixed-length fields. In this file, the first 10 characters make up a serial number, the next 4 indicate the price in dollars, and the remaining 58 contain a product description. Each line ends with a return. To convert this information into a FileMaker file, create a database with three fields: serial number, price, and description. The following script takes care of the rest.

Record Stop Run

```
set fffile to (choose file with prompt "Select the fixed-field file" of type {"TEXT"})
set fff to (open for access fffile)
tell application "FileMaker Pro"
    set fileend to (get eof fff)
    set dataread to 0
    repeat until dataread = fileend
        set therec to (create new record at front document)
        tell application "Finder"
            set recstr to (read fff for 72)
        end tell
        set dataread to dataread + (count recstr)
        set serno to characters 1 thru 10 of recstr
        set prce to characters 11 thru 14 of recstr
        set descr to characters 15 thru 71 of recstr
        set (cellValue of (cell "serial number") of therec) to serno as string
        set cellValue of cell "price" of therec to prce as string
        set cellValue of cell "description" of therec to descr as string
    end repeat
end tell
```

Much like the first line of the Finder script, this statement lets the user choose a file to import via a dialog box. The **of type {"TEXT"}** part forces you to choose a text file.

This statement, **open for access**, is a Standard Addition that lets you read text files directly from AppleScript. Here, we're setting the variable **fff** to a number that will represent the open file. (The number has no meaning; it simply keeps track of the file so we can write to it later.)

The script needs to read data until the file ends. The statement **get eof fff** counts the number of characters until End Of File (eof) in the file.

The script has to keep track of the total amount of data it reads. Since the script knows how much data the file contains, it can check to see if it's done after reading each line.

Here the script creates a new record to store the line of data it's about to read, with the assumption that the front document (that is, the database in the frontmost window in FileMaker) contains our data file.

This is a different form of the **repeat** loop. Instead of looping a fixed number of times, the script will keep looping until it reads every character in the file.

Now the script reads the record itself. The **read fff for 72** command tells AppleScript to read 72 characters (the number of characters in one line) from the text file. A **tell application "Finder"** block encloses the line because otherwise FileMaker would interfere with the command.

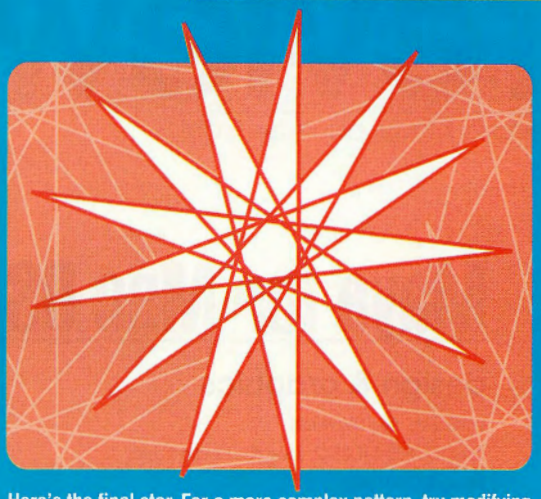
AppleScript itself can pull apart a string of characters; in these four lines, the script first keeps a running count of how many characters it reads, then pulls the fixed-field file into pieces.

Here the script sets the actual values in the database. For some strange reason, the folks who implemented FileMaker's AppleScript dictionary decided to call the representation of a field in any particular record a **cell** and the value stored in each cell a **cellValue**.

Seeing Stars in Illustrator

Generating complex geometric patterns in Illustrator requires a surprising amount of mathematics. To make a star, for example, you have to figure out exactly what angle should appear at each corner of the star, then replicate that angle repeatedly. Shouldn't your Mac do all this calculation for you? It should, and it can—if you use AppleScript.

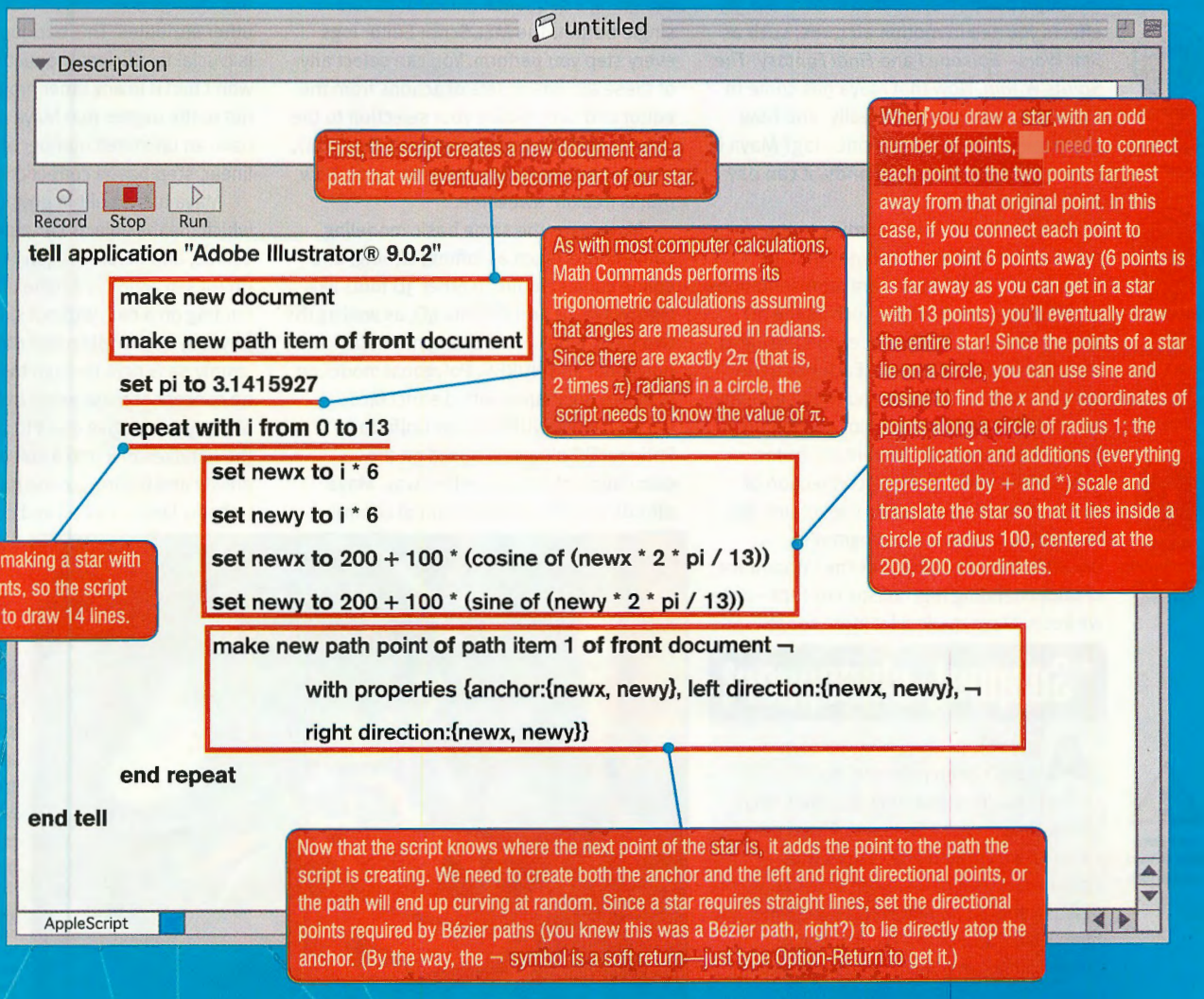
The first time most would-be scripters look into Illustrator 9.0's AppleScript dictionary, they get a rude shock: It's entirely blank! The reason is simple: Illustrator 9.0 uses a plug-in to handle AppleScript commands. Download the scripting plug-in from Adobe's Web site (www.adobe.com/support/downloads/ilmac.htm) and drag it into the Extensions folder of Illustrator's Plug-ins folder.



Here's the final star. For a more complex pattern, try modifying the script to connect every point to every other point.

The Script

AppleScript doesn't include the necessary trigonometric functions (sine and cosine) to perform the mathematics involved in creating geometric figures, so you need to use a Scripting Addition. We relied on the dated but still usable Math Commands freeware (www.osaxen.com), along with some basic knowledge of trig, to create a 13-pointed star. And don't worry—this process is far less painful than sitting through ol' Mrs. McGillicuddy's freshman trig class.



Ian Sammis is now working on an AppleScript that will write features for him.

Maya for Mac OS X

design & graphics

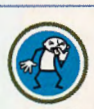
Company: Alias|Wavefront
Contact: 800-447-2542, www.aliaswavefront.com
Price: $7,500 (SRP)
Requirements: G4, Mac OS 10.0.4,* 512MB RAM, ATI Rage 128 or Radeon graphics card,* three-button mouse

You can master minute details and achieve incredible realism with Maya's customizable tools and rendering engine.

FREAKIN' AWESOME!
The most valuable products, the coolest gizmos.

SPIFFY
A solid offering. Overall a good investment.

YEAH, WHATEVER
Neither recommended nor rejected. Some might like this, but we weren't impressed.



BLECH!
Give us back the time we spent testing this.

Maya coming to the Mac is undoubtedly one of the greatest events for the Mac 3D user, and likewise for the whole Mac community. It's proof that an industry leader sees the Macintosh as a viable 3D platform. Maya (on other platforms) created a lot of the 3D effects you see in motion pictures, such as *Star Wars—Episode I* and *Final Fantasy: The Spirits Within*. Now that Maya has come to Mac OS X, how good is it really, and how can you justify the $7,500 price tag? Maya is damn good—in the right hands, it can pay for itself overnight.

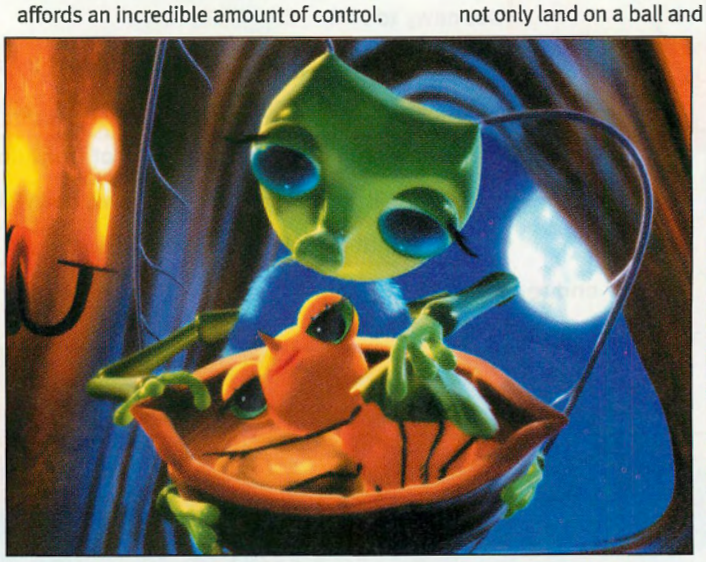
Maya is based on (according to the manual) "*nodes* with *attributes* that are connected." Huh? *Nodes* are representations of different aspects of 3D, such as the 3D object, its shape and surface, and the lights that illuminate a 3D scene. Each node has specific *attributes*, which you tweak to define an object's appearance. Color and texture, for example, are two different attributes of a surface node. The interconnection of these attributes and nodes constitutes the framework of Maya. The program's documentation emphasizes the importance of understanding this holistic concept—once we got it, Maya made a lot more sense.

Maya is based on MEL (Maya Embedded Language), a scripting language that lets you create tools and execute often-used commands. MEL works much like AppleScript; it automates complex tasks by assigning a sequence of functions to a single button. The MEL Script Editor logs every step you perform. You can select any of these actions or sets of actions from the editor and simply drag your selection to the Shelf (see "Ultimate Customizability," p41), where it becomes a push-button tool. Now *that* is freakin' awesome.

Maya uses the same basic modeling conventions (such as lofting, lathing, and spline curves) found in other 3D tools like LightWave 3D and Cinema 4D, as well as the two basic types of modeling methods: polygonal and NURBS. Polygonal modeling is based on shapes with distinct faces (facets), while NURBS (Non-Uniform Rational B-Splines) is based on the calculation of curves—either way, Maya affords an incredible amount of control.

As you work—creating, scaling, bending, positioning, stretching, and otherwise tweaking objects—Maya records a history of those little tweaks in the Attribute Editor. You can go back to any one of those attributes and change it without affecting the node's other attributes. This backlog of data history is crucial to efficient production, and you won't find it in any other program—at least not to the degree that Maya offers. You also have an unlimited number of undos for linear, step-based corrections.

Maya has a built-in physics engine, which means objects can carry weight, collide, and deform. A good example of physics in action is a handkerchief object landing on a ball. Without simulated physics, the handkerchief object would simply pass right through the ball because no concept of mass exists in the scenario. In Maya, you can give mass to the objects, turn the handkerchief into a soft object, then add gravity and friction, so the handkerchief can not only land on a ball and conform itself to



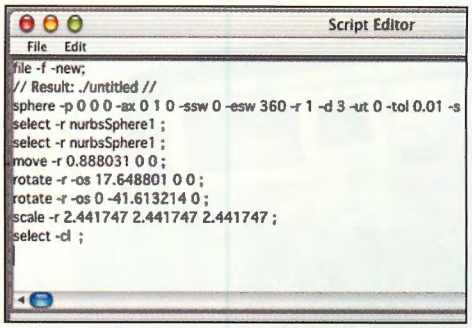
Maya's magic—in this case, proper use of color and lighting transforms basic NURBS models into stunning 3D scenes.

©2001 Callaway & Kirk Company LLC. All rights reserved. Image courtesy Kleiser-Walczak. Based on the book by David Kirk, *Little Miss Spider*, copyright (c) 1999 by Callaway & Kirk Company LLC.

*Support, shmupport

As of this writing, Mac OS 10.1 hasn't been released, so Alias|Wavefront has only qualified Maya to work with Mac OS 10.0.4. There are also some video driver issues with nVidia GeForce cards; both of these issues should be resolved by the time you read this. For the record, Maya worked fine on our prerelease version of Mac OS 10.1, GeForce card included.

For a demo video of Maya, see The Disc.



The MEL Script Editor records your every move—here we've created a sphere which we then moved, rotated (on two axes), and resized.

the ball's shape, but also slide off as it would in real life. All this is calculated on the fly, so you can view the effects from different angles without having to stop the animation or render the scene.

Maya's built-in particle engine creates realistic atmospheric effects (including smoke, fire, sparks, and liquid), and you can apply particle dynamics to objects—for example, shattering glass into bits. You can also integrate particle dynamics into more-complex projects, such as creating a windblown field of grass and flowers, or building a crowd of walking people.

Paint Effects is unique to Maya, and it's an amazing, interactive method of painting 2D and 3D elements into your scene. Imagine assigning a sunflower, complete with stem and leaves, to a paintbrush, and simply stroking across an empty plane to plant a row of flora. You can create an entire field of flowers this way. Thanks to the particle engine, these flowers react to natural dynamics, like wind, just as real flowers would.

If Maya has an Achilles heel, it's the rendering engine. The quality of rendered output is very good—sufficient for most production needs—but it renders on the slower side, even on dual-processor Macs, because Maya isn't optimized for multiple processors.

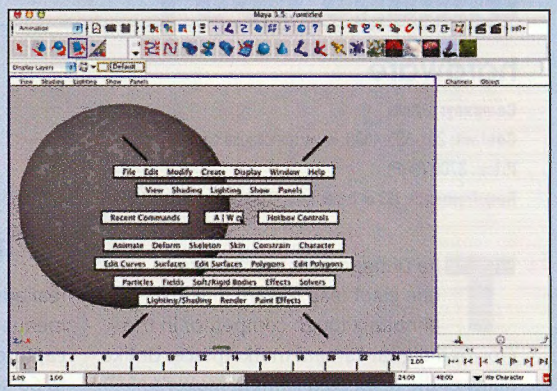
Early adopters, buy your copy now. Maya is very stable for a first-time release (we experienced no crashes, just occasional slow-downs), so you can get right to work. Yes, Maya is expensive, but it's an incredible tool—a great investment if you want to learn an industry-standard application but don't have (or want) an NT or SGI machine to run it on. Becoming a Maya guru can get your foot into many a 3D-studio door. Big-time Hollywood studios use Maya for a good reason—there's no better off-the-shelf application with such ease of use, customizability, and detailed tweaking. And that $7,500 is chump change compared to the return studios get for their money.—*Andrew Tokuda*

good news: MEL scripting. Low-level tweakability. Customizable interface. Surprisingly stable.
bad news: Not multiprocessor aware. Artistic ability not included.

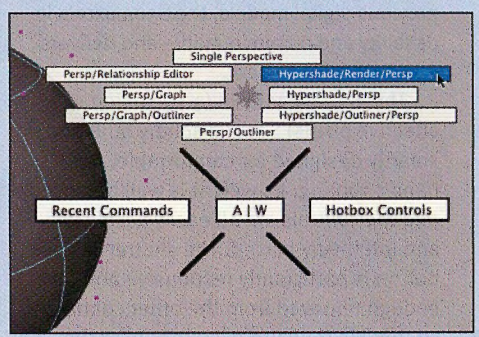
Ultimate Customizability

Flexibility is key to any powerful software, and Maya allows you to access and invoke tools on your own terms and even control what they do. Four utterly customizable shortcuts are the Hotbox, Marking Menus, the Shelf, and Hotkeys.

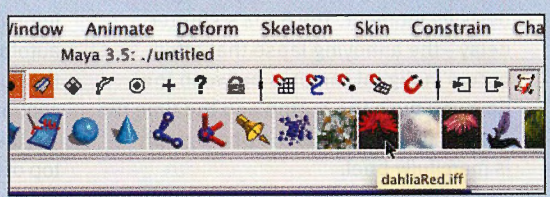
Pressing the space bar opens the **Hotbox**, an instant toolbar that gives you access to every single menu function in Maya. You can configure the Hotbox to show only the menu functions you desire.



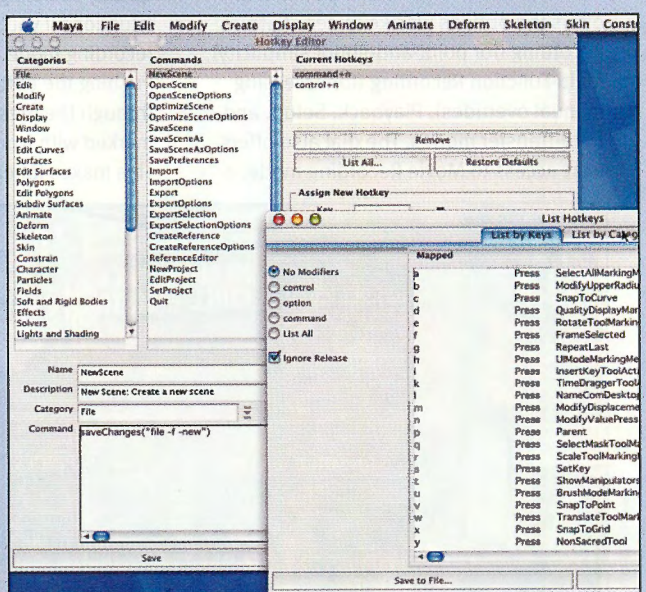
Invoke **Marking Menus** by clicking an area in the north, south, east, or west quadrant, or in the center of the open Hotbox. This Marking Menu offers access to different panel layouts.



Stock the **Shelf** with your own tools; the buttons represent common functions and commands. Here, we set up a brush that paints a 3D dahlia.



For the ultimate in one-tap functionality, you can assign commands to single **Hotkey** keystrokes.



You can see the Hotbox and Marking Menus in action by checking out a free Maya tutorial video at Gnomon Online (www.gnomononline.com).

Dimage S304

hardware

Company: Minolta
Contact: 201-825-4000, www.minoltausa.com
Price: $700 (SRP)
Requirements: G3 or faster, Mac OS 8.6–9.x, built-in USB

PHOTOGRAPH BY W. B. JONES

The svelte Dimage S304 snaps great-looking photos and looks great doing it.

The Dimage S304 represents one giant leap toward making Minolta a tough competitor in the crowded digital-camera marketplace. Unlike many of the respected camera maker's previous digital models, the S304 excels in usability and picture quality—and delivers excellent value to boot.

The 3.34-megapixel (3.14 million effective pixels) S304 is solidly built and smartly designed for comfortable, one-hand shooting: Its weight is well balanced, and the controls are all easily accessible and intuitively placed. The shutter-release button is particularly responsive and far enough removed from the other controls so that it's tough to miss capturing the decisive moment. The S304's shutter delay—the annoying lapse that often occurs in digital cameras between the time you push the button and the time the camera finally records the photograph—is mercifully brief.

The main command and power dial offers the options we like to see: Auto-Recording (for point-and-shoot simplicity), Multi-Function Recording (for accessing manual overrides), Playback, Setup, and Data-Transfer modes. The dial also offers easy access to Movie Recording mode, a real advantage over scrolling through menus to access this function. The S304 captures clips of digital video with sound up to 60 seconds long, which is quite good; many digital-still cameras top out at 15- or 30-second clips, and they often lack sound-recording capabilities. The microphone doesn't perform well in situations with background noise, but that isn't unusual among cameras of this sort—recording sound is an appealing bonus, but don't expect high fidelity.

The Dimage sports a 4x optical zoom lens—that translates to 35mm to 140mm in 35mm camera terms, although the zoom control itself is a little sluggish and imprecise. The camera also offers five-area autofocus and optional manual override of the built-in sharpness, saturation, and contrast settings.

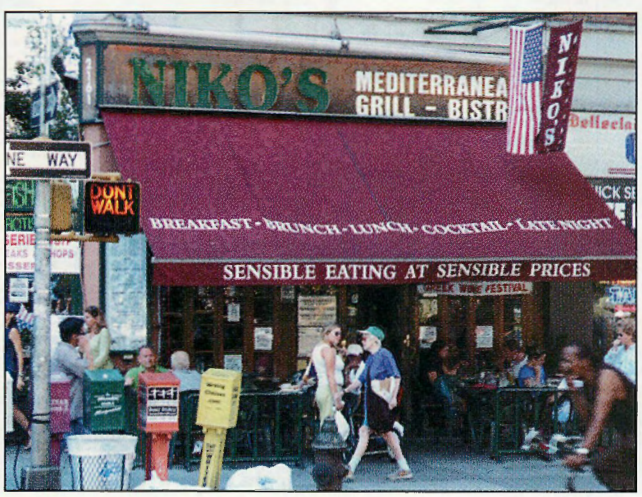
The camera features an extra button on top of the unit, next to the LCD readout, for quickly selecting one of five preset shooting situations if you're shooting in Auto-recording mode. It's a nifty convenience: Pushing the button multiple times scrolls through the presets, which are clearly marked with icons above the LCD readout. This makes for easy access to Macro, Portrait, Landscape, Night Portrait, and Text settings.

The biggest drawback to these automatic settings is the difficult-to-decipher default flash setting—which is off in the Macro, Landscape, Night Portrait, and Text modes. Although that may well be a logical choice in Macro, Landscape, and Text, there isn't any indication in the LCD display that the flash won't fire unless you turn it on, so you're likely to forget to do so. And the Night Portrait setting is really misnamed, as such a portrait would require that the flash be on; not only must you turn on the flash manually, but doing so is the only way to activate the Slow-Sync flash. We'd prefer to see that setting included in the standard flash menu.

PHOTOGRAPH BY MICHAEL SHAPIRO

The Dimage S304's macro function is easily accessed and performs well, as seen in this unaltered photo.

The S304 is intuitive and fun to use, and Minolta has made some impressive leaps in its metering and image-processing algorithms: Images were consistently well exposed, with accurate, rich colors. We saw only minimal color aberrations and noise in our output. The S304's image quality was among the best we've seen in high-end consumer models, delivering results on a par with cameras that cost upward of $200 more.—*Michael Shapiro*



PHOTOGRAPH BY MICHAEL SHAPIRO

The Dimage S304 delivers excellent detail and color reproduction, offering sensible photography at a sensible price.

good news: Competitively priced. Great output. Smart controls. Flexible movie mode. **bad news:** Poorly labeled flash settings. Buried Slow-Sync flash setting. Imprecise zoom.

MSE-U33HB USB Digital Audio Processor

hardware

Company: Onkyo
Contact: www.onkyousa.com
Price: $199 (SRP)
Requirements: Power Mac, Mac OS 9.0.4 or later, built-in USB port

PHOTOGRAPH BY W. B. JONES

Forget that old record player—this little device records vinyl straight to your hard drive.

Apple's sound-input port may have gone the way of the dodo, but its absence doesn't spell death to the desktop musician. While pro audio musicians are better served by the multitudes of PCI-based sound cards on the market, audio hobbyists can take advantage of USB audio devices, such as the Onkyo MSE-U33HB USB Digital Audio Processor, which provides more audio inputs than your typical Mac.

The MSE-U33HB is a small, powered USB device that features a set of stereo RCA ins and outs, as well as a 1/8-inch microphone input. An input selector lets you toggle between Line In (for home-stereo connections) and Mic In (for nonpowered microphones), while a small knob up front adjusts the input levels. The device also acts as a USB hub, offering three available ports.

Hooking up the unit is easy and doesn't require any drivers. We powered up the device and connected it to our iBook's built-in USB port with the included cable, and the iBook recognized it instantly. We were more than happy to install the included software: BIAS Peak LE 2.5 and Rhythmic Circle FUSE (see "Bundled Booty," right).

We took a trip down memory lane and connected our dusty, ancient 4-track recorder to the MSE-U33HB,then recorded our old demo songs to the Mac's hard disk using Peak LE. The MSE-U33HB did not fail—our audio recorded consistently with no dropouts. Though we had a few clipping problems in the beginning (Peak didn't satisfactorily indicate that our audio levels were too high), we quickly remedied the problem by turning down the input level on the device.

The MSE-U33HB showed its benefits when we made a voice recording. Normally, we have to add mic gain in our recording app to get decent levels. With the MSE-U33HB, we got a nice gain boost directly from the Mic In, eliminating some of the hiss associated with level boosting done via software.

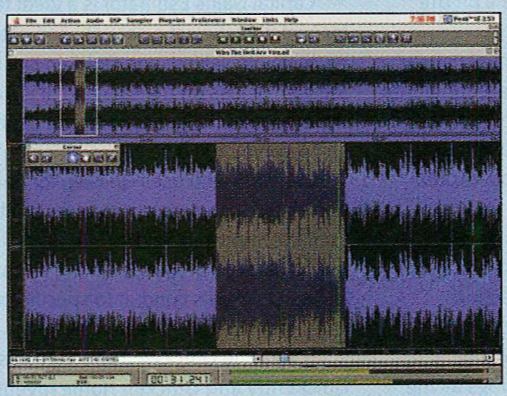
The device's RCA outs allow you to hook up a pair of powered speakers to turn your Mac into a pseudo sound system—unfortunately, all of our powered speakers either possess 1/8-inch connectors or are wire-in only, so we didn't get to test this. However, we did connect a tape deck to the outs and recorded our newly remastered songs back to tape (just because we could).

Though it's pricey, if you have records or tapes you'd like to digitize or you need a means of getting sound into a Mac that lacks audio input, the MSE-U33HB is a great device that handles the job easily.—*Kris Fong*

good news: Cures the no-audio-in blues associated with newer Macs.
bad news: Pricey.

Bundled Booty

The Onkyo MSE-U33HB may have a fat sticker price, but there's added value in its software bundle.



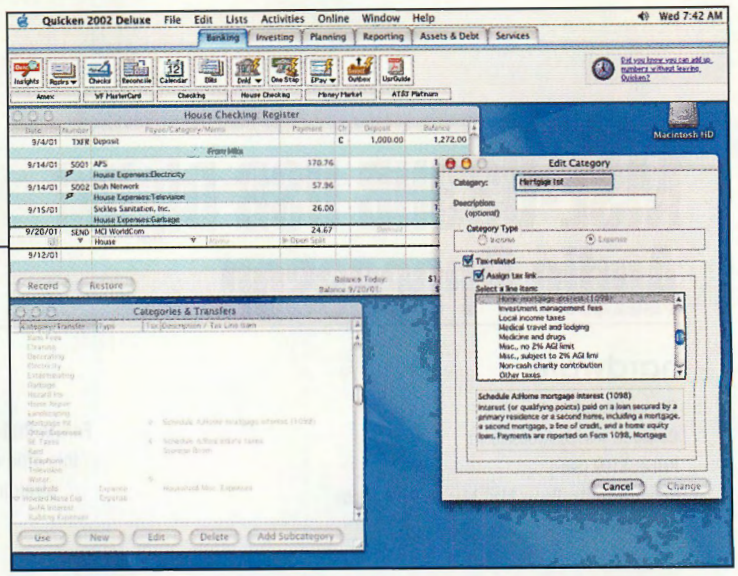
Bias Peak LE 2.5 This audio-editing program handles recording via the MSE-U33HB, as well as editing and enhancing stereo audio files by normalizing audio, cutting and pasting segments, and adding Premiere-format effects. The MP3 encoder will come in handy, but it requires Macromedia's Shockwave Audio Xtras file (free, downloadable from www.macromedia.com).

Rhythmic Circle FUSE If you're looking to add a little eye candy to your music, this video-jockey app generates tons of hippy-trippy animations that mutate according to the audio you play through the MSE-U33HB. Select any combination of images, patterns, and shapes, and let your tunes dictate the effect.

Quicken 2002 Deluxe

productivity

Company: Intuit
Contact: 800-811-8766, www.intuit.com
Price: $59.95 (SRP), $20 rebate for upgrading users
Requirements: Mac OS 9.0.4 or later with 64MB RAM, or Mac OS 10.0.3 or later with 128MB RAM; 75MB free hard disk space



Built for Mac OS X, Quicken's implementation of the Aqua interface is crisp and clean—financial management never looked so good.

Devoted Mac fans may recall a startling announcement Intuit made in 1998: The company would discontinue development of Quicken for the Mac OS, its best-selling personal-finance software package. Fortunately for Quicken users, Apple changed Intuit's mind. Quicken 2000 and 2001 may not have thoroughly convinced the Mac community of Intuit's devotion to the Mac OS, but Quicken 2002 Deluxe's modern look and evolved feature set remove all doubt.

To start, Quicken 2002 Deluxe was built for Mac OS X and sports an excellent implementation of the Aqua interface. Don't worry, though—if you haven't taken the leap to Mac OS X yet, you can install the OS 9 version from the same disc. The feature set of both versions is identical, so when you upgrade from OS 9 to OS X, you'll hit the ground running.

The four new features that really show Intuit's devotion to Mac users are functions the Windows version has had for some time: Brokerage Transaction Download, One Step Update, PIN Vault, and Capital Gains Estimator.

Brokerage Transaction Download builds on the convenience of prior Quicken versions' online access to transaction records from financial institutions. Now active investors can easily record and account for their brokerage dealings as the deals go down, instead of waiting for the end of the month. Brokerage Transaction Download is a great idea, but it won't be a great feature until more brokers provide the transaction downloads—Intuit expects a wider support base in the near future.

One Step Update is another timesaving feature—it lets you exchange transaction information with multiple banks, credit card companies, investment firms, and the Quicken.com Web site, all in one fell swoop. PIN Vault, a related feature, stores PINs (personal identification numbers) for all your online-enabled accounts. One Step Update lets you unlock all PINs with one password.

Capital Gains Estimator is a great feature for investors. Select a security and enter how much you're selling, and Quicken calculates the gain or loss on the sale and, if it's a gain, the amount of long- or short-term capital gains tax you will owe.

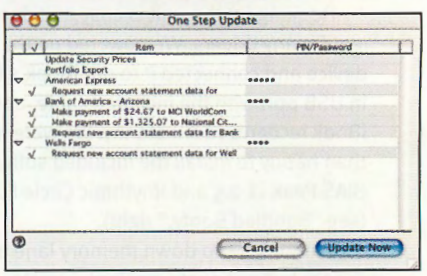
Everyone who uses Quicken for tracking tax-related income and expenses will benefit from the improved Set Up/Edit Category dialog box, which makes setting up Tax Links—Quicken's conduit to specific tax-form lines and categories—a breeze.

Long-time Quicken users may miss the QuickEntry and Quicken Home Inventory components (for quick entry of minor financial activities and cataloging household items, respectively). Intuit includes these programs on the Quicken installer disc, but the company warns that it no longer supports them.

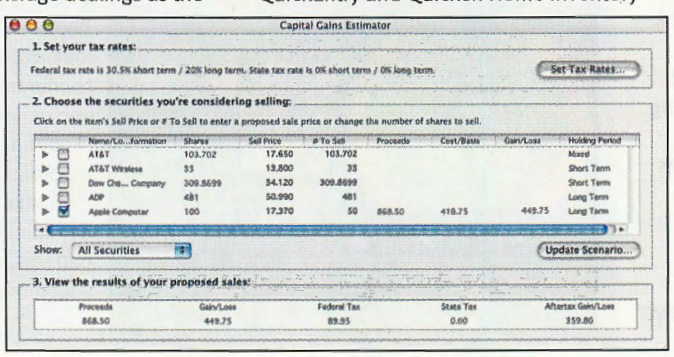
Annual upgrades to software are often a questionable expense, but there's no question about a Quicken 2002 upgrade—buy it! The improved feature set makes it worthwhile for any Quicken user.

—Maria Langer

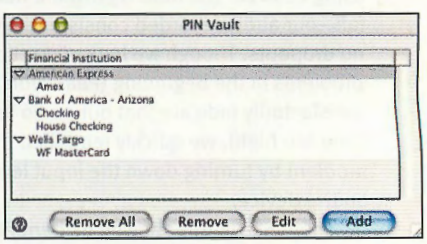
good news: Built for Mac OS X. New timesaving features. **bad news:** Windows version still offers more features. Brokerage Transaction Download not widely supported.



They call it One Step Update because it can update all your online-enabled accounts at the push of a button...

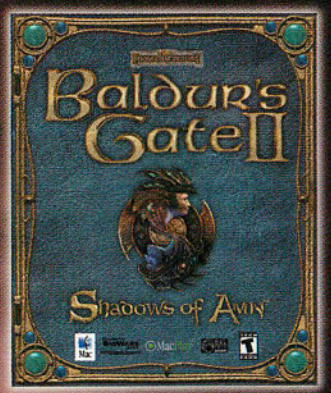


Start up, kick butt—then Capital Gains Estimator helps you decide when it's time to cash out. (Nah, we wouldn't really sell our Apple stock.)

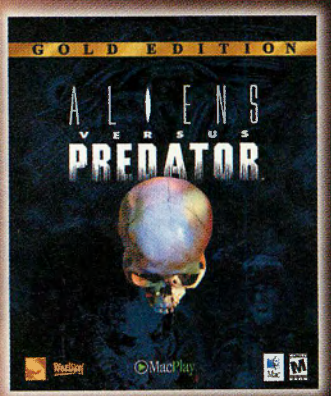


...provided you've stoked PIN Vault with your personal identification numbers.

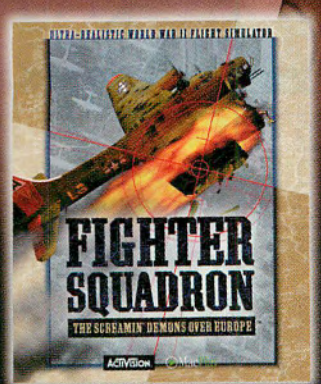
Play Different.



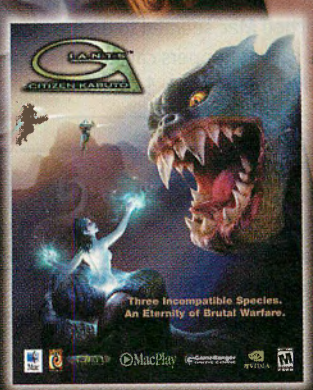
Quest



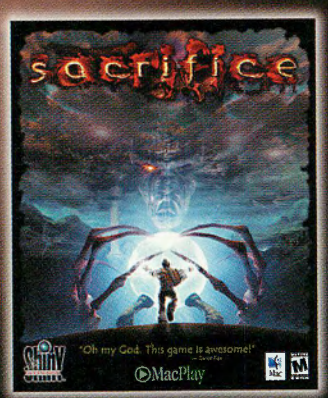
Hunt



Fly



Laugh



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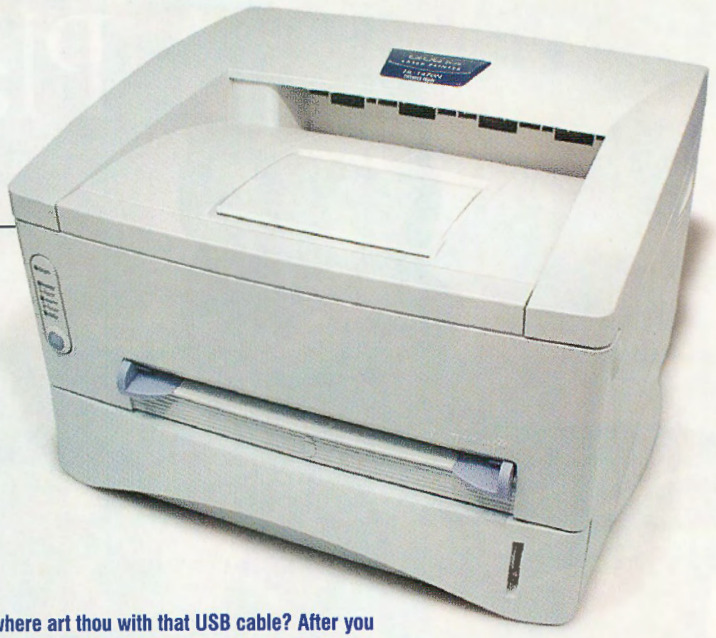
MacPlay

Brother HL-1470N

hardware

Company: Brother International
Contact: 800-276-7746 or 908-704-1700, www.brother.com
Price: $499.99 (street)
Requirements: G3 or faster, Mac OS 8.5.1 or later, 50MB free hard disk space



PHOTOGRAPH BY W. B. JONES

Oh Brother, where art thou with that USB cable? After you procure one for yourself, this printer works great.

Laser printers need to be quite persuasive these days—for the same price as a basic laser, you can buy an inkjet printer glorious enough for the gods. So who would buy Brother's HL-1470N black-and-white laser printer? For small or home offices that need AppleTalk compatibility and PostScript for printing lots of text and moderate amounts of graphics, this printer is a robust and dependable choice.

The HL-1470N is easy enough to set up, with one notable exception. The box ships with neither a USB nor an Ethernet cable. However, once you get cables, the setup for this 1,200-by-600-dpi printer is a snap. The printer offers Brother's emulated PostScript Level 2, 250-sheet paper tray, and a 10/100Base-T Ethernet port for network printing; even a Mac OS X driver is available at www.brother.com.

In action, the HL-1470N produced crisp text at both large (128-point) and small (6-point) type sizes. We printed hundreds of pages with nary a dip in output quality. At 300, 600, and 1,200 dpi, text pages chugged through at the advertised rate of 15 pages per minute. Of course, spooling times varied depending on the print resolution. Spooling took about 10 seconds longer at 1,200 dpi than it did at 300 dpi, and it showed—we found that smooth color gradations and sharp edges required that we print out graphics at 1,200 dpi.

On the subject of graphics, the printer ships with 8MB of onboard memory. When printing via USB from a PowerBook G3/400 with 128MB of RAM, we weren't able to print a 22MB Photoshop file. However, a 500MHz G3 iBook with 256MB of RAM printed the same file without issue. Brother recommends upgrading the onboard memory (a 32MB card costs about $40) if you plan to print large graphics, but sufficient RAM in the attached Mac seemed to do the trick for us, and savvy shoppers can get *at least* an extra 128MB for the same $40.

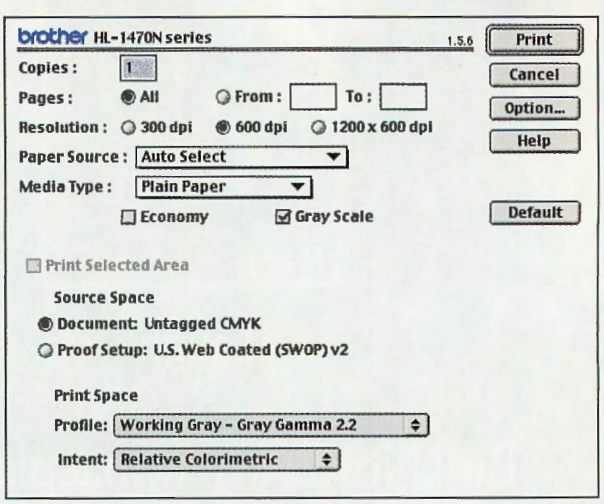
As always, we do have some nitpicky complaints. The one-button control panel (with four LED lights) on the printer isn't much help in times of malfunction. Plus, unlike its PC counterpart, the Mac software lacks options like email printing, interactive help, and some brightness and contrast settings. Also, Brother's USB drivers don't do PostScript (EPS) graphics, but the printer's Ethernet port gets you around that limitation (see "Printing PostScript," left).

Still, for $500, the HL-1470N offers high-quality printing, Ethernet networking (you provide the cable), and emulated PostScript. We found this printer a reliable device for printing all of our documents and most of our graphics.
—Narasu Rebbapragada

good news: Speedy, clear prints. Low cost. **bad news:** Display Panel unclear. No USB cable.

Printing PostScript

At some point, you'll probably want to print some PostScript graphics. You'll have to step up to network printing over Ethernet. This is as simple as connecting the HL-1470N to your network with a standard Ethernet cable, and using Apple's LaserWriter 8 Driver (installed with the Mac OS) and Brother's PPD (on the HL-1470N's disc and at www.brother.com). No network? All you need is a crossover Ethernet cable, which connects the printer directly to your Mac, creating a mini-network for your printing convenience. After a little Web browser–based printer configuration (PDF manual included), you've got PostScript printing.



Although not as useful as its PC counterpart, Brother's print software gives you some paper-type and color options.

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PDA Roundup

hardware

m500

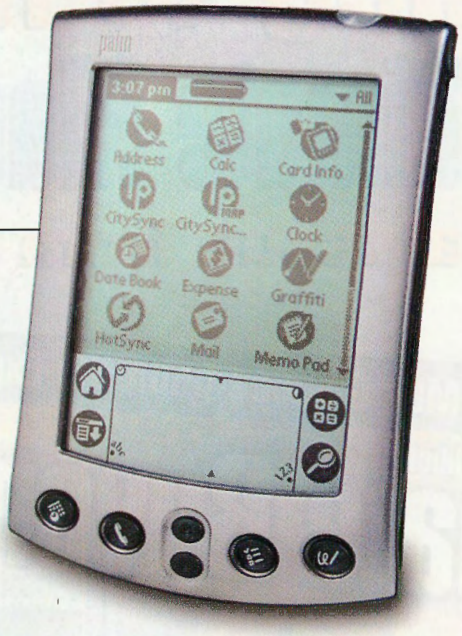
Company: Palm
Contact: 800-881-7256, www.palm.com
Price: $329 (SRP)
Requirements: Power Mac, Mac OS 8.5.1 or later, 15MB free hard disk space, USB port, CD-ROM drive

Visor Edge

Company: Handspring
Contact: 888-565-9393, www.handspring.com
Price: $299 (SRP)
Requirements: Power Mac, Mac OS 8.5 or later, 25MB free hard disk space, USB port, CD-ROM drive

Clié PEG-S320

Company: Sony
Contact: 888-595-8246, www.sony.com/clie
Price: $199.99 (SRP)
Requirements: Power Mac, Mac OS 8.5 or later, 15MB free hard disk space, USB port, CD-ROM drive



PHOTOGRAPHY BY W. B. JONES

The Palm m500 is the thinnest and shapeliest of the three handhelds.

Though a marketing hack may have cooked up the term *personal digital assistant,* there's some truth in that label: Handhelds *are* a personal matter, and nothing exemplifies that better than our three candidates for smallest PDA of the year. Like Hollywood stars, the latest grayscale PDAs from Palm, Handspring, and Sony are lighter, thinner, and smaller than ever. Each is based on the Palm OS, each runs on a rechargeable battery, and each offers 8MB of internal memory. But the resemblance ends there. Which PDA is right for you ultimately depends upon how you use it, where you carry it, how much it costs, and even how it fits in your hand.

That said, we'll still put in our two cents' worth. Our price-be-damned choice is the Palm m500. Its slim, contoured form factor, combined with ease of use and killer software, make it the overall best handheld of the bunch. The rub? The m500 is also the most expensive device. Handspring's Visor Edge offers the best expansion possibilities of the three but unfortunately emphasizes design over ease of use—so much so that finding the device's power switch took us nearly 5 minutes. The Sony Clié PEG-S320 is the cheapest of the bunch but is not Mac compatible out of the box and requires third-party software for hot syncing.

Some people might like the Clié's petite body enough so that they don't mind its piecemeal approach to software. Others might appreciate the Visor Edge's expansion capabilities. As we said, PDAs are a personal matter. Here's our personal take on all three.

Palm m500

First off, we'd like to congratulate Palm on finally checking what year it is and evolving from serial to USB. The addition of modern connectivity, along with the m500's tiny body and light weight, make it hands down the best combination of form and function.

The m500 comes with a USB cradle that recharges the device if you plug in the included AC adapter; once you install the Palm Desktop software on your Mac, hot syncing is a breeze. The m500 also comes with a number of cool apps that cost beaucoup bucks if you purchase them separately, somewhat justifying the device's higher price. One of these apps is Dataviz's Documents to Go, which you can use to edit Word and Excel documents on your Palm (this software alone costs $70). Other apps include a more-advanced calculator, PalmReader for reading e-books, and PhotoSuite for viewing images on your handheld. For importing all those files, the m500's card slot reads both Secure Digital and MultiMedia cards.

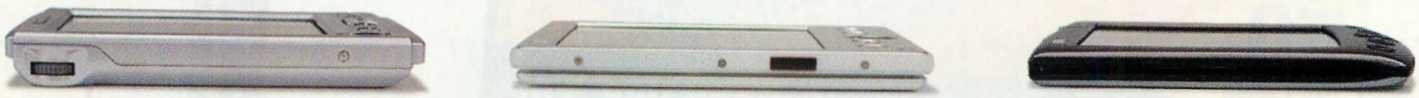
The Palm m500 fits oh-so-snugly in the palm of your hand and is lithe enough to fit into the pocket of a tight pair of jeans with nary a bulge. So why, we want to know, is the cradle the size and weight of a small boulder? Besides the cradle, our only gripe with the m500 is its over-$300 price tag—still a bit high for a grayscale handheld, even if it is cool.

The hand that rocks the m500's cradle had better be a really large one.

Handspring Visor Edge

There are times when you wonder, "Who hired that person?" That's what we're wondering about the guy or girl who designed the Visor Edge.

For starters, the power switch blends in so seamlessly with the device's shell that it's difficult to find (hint: bottom right corner). Because the power switch is embedded into



Stylin' and profilin' (left to right): Sony's Clié PEG-S320, Handspring's Visor Edge, and Palm's m500.

We'll give you a buck if you can figure out where the power button is on the Visor Edge. OK, no, we won't.

The Clié is a sprightly little PDA that unfortunately comes only with PC software.

The Clié comes with a USB cable in lieu of a proper hot-sync cradle, but we love the jog dial.

the device and doesn't stick out, it's impossible to hard-reset your PDA without painfully contorting your fingers (a hard-reset requires holding down the power switch while inserting a paper clip into the Reset hole on the back). Then there's the metal flip lid, which only opens partway and doesn't tuck under the Visor's body (thankfully, it's removable). Also, the stylus wedges precariously between two grooves on the side rather than sliding into one long holder. All this (not to mention the Visor's bulky girth) adds up to one poorly designed PDA.

The Edge's cradle is awesome, but the flip lid doesn't quite make it all the way around to the back—*so* annoying.

Design faux pas aside, the Visor Edge works just fine and hot syncs without a hitch. It ships with a SpringBoard expansion slot (Handspring's proprietary technology) that you slip onto the back of the device when you need it. Of all the different PDA expansion capabilities, the SpringBoard's is by far the coolest, capable of adding an MP3 player, a digital camera, or a GPS device to your Visor. It's a really neat feature—for those who use it.

Sony Clié PEG-S320

For Mac users, the Sony Clié line is a sad case of "If only..." If only Sony supported the Mac, the affordable Clié would be a wonderful alternative to Palm and Handspring.

The Clié PEG-S320 ships with a slew of software—all of it is Windows only, but if you love the Clié enough, there are ways around that limitation. First and foremost, The Missing Sync from Mark/Space ($29.95, www.markspace.com) bridges the communication gap between the Clié and the Mac. All we had to do was download and install the free Palm Desktop software from Palm's Web site (www.palm.com), then install The Missing Sync—after that, we were up and hot syncing in no time. Even so, the Clié ships with a number of applications Mac-heads can't use. For instance, Sony's own PictureGear converts images to a format the Palm OS can read, so you can import pictures to, say, your date book or address book—but only from a PC.

Software aside, the Clié is a slick little device. It features a jog dial in the upper-left corner that makes scrolling and navigation easy, and the backlighting on the Clié is much brighter than on the other PDAs. Although the device is not as thin as the m500 or the Visor Edge, it feels less cumbersome because of its small dimensions.

The PEG-S320 has a slot for a Memory Stick but no hot-sync cradle—you'll have to make do with the USB cable (included). That means you have to use the Hot Sync app on the Clié to perform this ritual: a small annoyance compared to Sony's overall snubbing of the Mac market.—*Cathy Lu*

m500

good news: Small and light. Fits well in smaller hands. Finally, USB!
bad news: Gigantic cradle. Expensive unless your company is paying for it.

Visor Edge

good news: Great expansion capabilities. Tiny cradle.
bad news: Awkward design.

Clié PEG-S320

good news: Cheap. Actual device is cool. **bad news:** No Mac support. Third-party software required for hot syncing on the Mac.

Vital Stats

Model	Visor Edge	m500	Clié PEG-S320
Memory	8MB	8MB	8MB
Expansion	Springboard	Secure Digital and MultiMedia cards	Memory Stick
Battery	Lilon rechargeable	Lilon rechargeable	Lilon rechargeable
Weight	4.8 oz.	4.0 oz.	4.3 oz.
Dimensions (in.)	3.1 wide by .4 thick by 4.7 long	3.1 wide by .4 thick by 4.5 long	2.9 wide by .6 thick by 4.6 long
Colors	metallic blue, metallic silver, metallic red	dark silver	silver
Price	$299.00 SRP	$329.00 SRP	$199.99 SRP

Jukebox HD-MP3 Recorder

hardware

Company: Archos
Contact: 949-453-1121, www.archos.com
Price: $349
Requirements: G3 or faster Mac, Mac OS 8.6 or later, USB Manager 1.2 or later, USB port

PHOTOGRAPH BY W. B. JONES

The Jukebox excels at playing tunes, recording sounds, and storing 6GB of data—accessing everything is another story.

We're all for MP3 players—they don't skip, they're compact, and you can easily swap songs to and from them. The downsides? Most cost an arm and a leg, come equipped with minimal storage, and require an additional chunk of change to upgrade. Then there's the Archos Jukebox HD-MP3 Recorder, which is in a league of its own.

What's it got that the others don't? Not only does it sound great, but it also packs a whopping 6GB hard drive that can store about 150 CDs' worth of MP3s. It also includes a built-in microphone for recording audio to MP3 on the fly, does double duty as an external USB hard drive, and has more bells and whistles than the Navy drum corps.

The Jukebox is slightly bigger and heavier than some MP3 players (such as the Rio 800). It features a backlit monochrome LCD screen that displays eight lines of text, an interface you navigate via push-button, and a plethora of ports (including stereo digital line I/O, stereo analog line I/O, and USB). The Jukebox houses four rechargeable NiMH AA batteries (included) inside its twin tubular outriggers, and ships with a set of headphones, padded carrying case, USB cable, power adapter and charger, and MusicMatch Jukebox software.

Though we eagerly anticipated the Jukebox's whisking us away to hours of musical oblivion, it had other plans for us. First, we had a difficult time opening its tubular battery compartments. The manual suggests using a flat-headed screwdriver to pry open the covers—this ultimately worked, but only after much prying, squeezing, and cursing. The screwdriver also marred the Jukebox's plastic body. Thankfully, you don't have to remove the batteries for recharging.

Transferring MP3s to the Jukebox requires little brainpower: After installing the software, just connect the device to your Mac's USB port, and the Jukebox appears on your desktop like an external hard drive, so you can upload MP3s via drag and drop. The Jukebox's LCD screen displays song titles and other info. You can also organize your music into playlists and listen to tunes in five different play modes.

As for sound—this puppy rocks! Though the headphones took some getting used to (the speakers suspend from your ears like a pair of eyeglasses), the sound is rich and clear; the device has controls for bass, treble, loudness, and bass boost; and you can crank the volume without distortion.

The Jukebox also records to MP3 in real time directly from your stereo, radio, or portable CD player via the various I/O ports, or you can use the built-in mic for voice recording. While our device-connected recordings sounded great, recordings from the built-in mic were weak—even with the highest recording-quality and gain settings, voices were barely audible above the background noise of the room we were in.

The Jukebox's main flaw is its insane interface navigation. This loony-tune controller features three function buttons and standard transport controls, all of which double as navigation buttons. While the menus and subsections are arranged logically, we got a headache trying to decipher how to jump from the recorder to the player to the root menu. The function buttons switch functions depending on which screen you're in—sometimes you have a back button; other times you have to press the rewind button to go back. Our favorite example of zany interface design is when you have to press the Off button to go back to the root menu. That's downright ridiculous. The cryptic manual does little to make this frustrating experience any easier.

Still, the Jukebox HD-MP3 Recorder is extremely versatile, and it records and plays superbly. If it weren't for its feckless interface navigation, the Jukebox would score our highest honor.—*Kris Fong*

good news: Great sound quality. Has 6GB of music and data storage. Good battery life. **bad news:** Confusing interface navigation. Batteries difficult to remove.

No Napster, No Cry

We hear you loud and clear: Where am I going to find 6GB of MP3s without Napster? Get over it! Napster's so 2000. These days, the cool kids are using Gnutella, a file-sharing protocol with no central search database—so it won't get pinched like Napster did. Once available only to Linux hippies and PC thugs, Gnutella is now accessible from the Mac clients listed below. See our November issue's *Scrapbook* section, p22, for more on Gnutella, or check out www.gnutella.co.uk. Also, there's always good ol' Usenet, now available at http://groups.google.com.

Mactella (free, www.cxc.com)
Limewire (free, www.limewire.com)
MacPhex (free, http://macxster.n3.net)
MP3 Rage ($24.95, www.chaoticsoftware.com)

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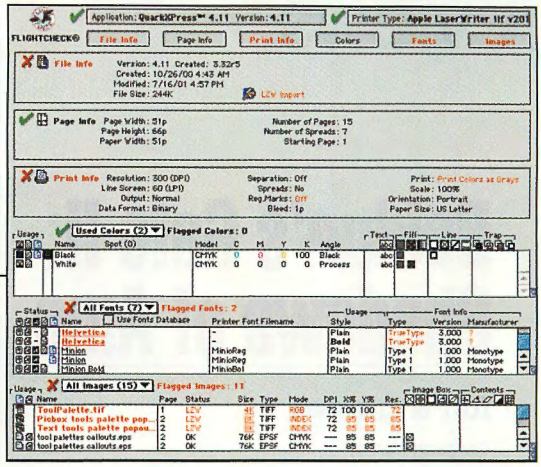
FlightCheck 4.2

productivity

Company: Markzware, Inc.
Contact: 800-300-3532 or 949-756-5100, www.markzware.com
Price: $399 (SRP); $379.05 for download
Requirements: PowerMac, Mac OS 7.6 or later, 16MB RAM, 10MB free hard disk space



FlightCheck's interface is intimidating, but its documentation and onboard help are top-notch.

Print designers know that errors such as missing fonts and missing or badly formatted images can cost you big at output time. Preflight is the term for manually checking and preparing files en route to your service bureau; FlightCheck spares you that tedium. Once used mainly by Quark jockeys, today's FlightCheck supports many other formats, including Acrobat PDF, InDesign, and Microsoft Word documents.

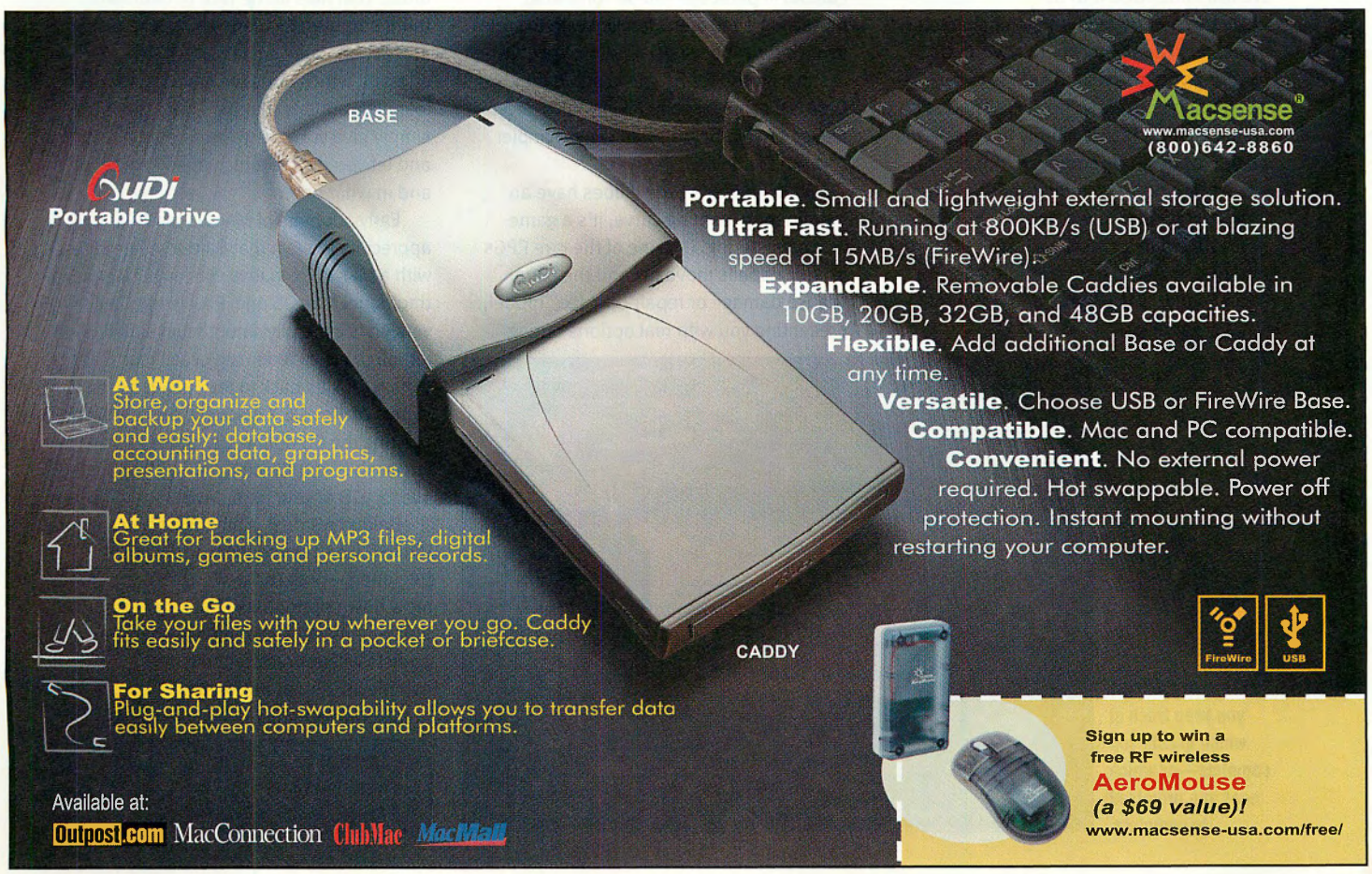
The alternative to FlightCheck is hunting down and opening every single supporting file (including fonts, images, dictionaries, and plug-ins) to check its status manually. And if that sounds like a hassle, woe is you if you receive unchecked files created by other people. Thankfully, FlightCheck goes both ways, scanning strange files for potential problems before you open them.

FlightCheck's Ground Controls window lets you pick which elements (including images, fonts, colors, and trapping, plus properties such as file format and status) you want to check. FlightCheck scans the document, recording its structure and elements' status vis-à-vis your Ground Controls settings, then lists anything that didn't pass muster, and gives possible remedies.

Much as we tried, we couldn't slip anything past FlightCheck—at least not without adjusting the Ground Controls settings to ignore certain settings—and that's what preflight is all about.

The application's interface seems busy at first, but the pop-up help and electronic documentation are full of shortcuts and tips. FlightCheck is a thorough preflight tool that can save you a lot of time and headaches.—*Elyse Chapman*

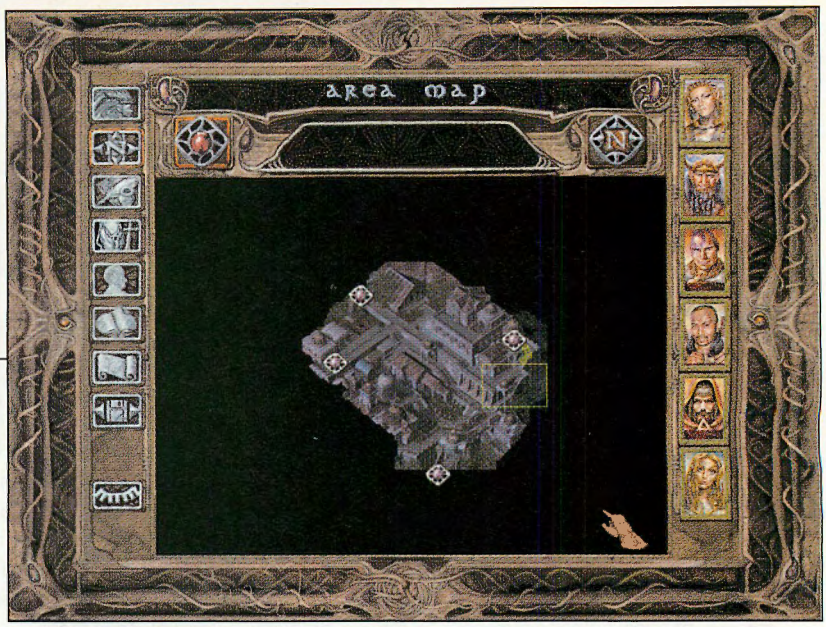
good news: Versatile. Thorough and fast. Very user-configurable. Excellent documentation.
bad news: Intimidating interface.



Baldur's Gate II: Shadows of Amn

fun & games

Company: MacPlay
Contact: 972-386-7575, www.macplay.com
Price: $49.99
Requirements: 233MHz G3 or faster, Mac OS 8.6 or later, 128MB RAM, 2.6GB free hard disk space for full install



This party's in trouble—monsters are popping up from all sides.

When we reviewed the first of the Baldur's Gate series (see *Reviews*, Nov/00, p56), we were torn—while the underlying game was one of the strongest role-playing games (RPGs) we'd seen, the Macintosh port was so slipshod (the multiplayer game, one of the key strengths of Baldur's Gate on the PC, was missing!) that we couldn't recommend it. Baldur's Gate II is quite another matter. This time, the game stands out as the fine, highly detailed RPG its creators intended it to be.

In the new installment, your character awakens in a prison, where a wizard is torturing you (the wizard seems to be attempting to draw some sort of power from you). Your first task is simply to escape the prison, assisted by some old friends (remember Boo, the miniature Giant Space Hamster?) Once you escape the prison, you find yourself in a massive city full of the intrigue, magic, evil, deception, and treasure that is the bread and butter of fantasy gaming.

Baldur's Gate II, like its predecessor, is set in the Forgotten Realms—a world familiar to Advanced Dungeons and Dragons aficionados. The game makes extensive use of AD&D rules, which immediately gives Baldur's Gate one of the richest and most detailed sets of spells, character classes, weapons, and equipment of any game on the market. Some familiarity with AD&D rules will help you enormously as you play this game—combat in particular can be somewhat mystifying if you aren't familiar with the rules involving weapon specialization, speed, spell casting, and so forth. Simply put, Baldur's Gate is a game for gamers—if you've never played an RPG before, start with a simpler one like Diablo II.

While Baldur's Gate II does have an intimidating learning curve, it's a game worth mastering. It is one of the rare RPGs in which spells move beyond the usual "cause damage or repair damage" model, presenting you with real options during combat. Do you rush forward and try to wipe out your characters' opponents in close combat? Do you cast an entangling spell in hopes of preventing a rush by your enemies? Or should you just lead off with a Fireball? (See "Baldur-Fu," p53.)

Baldur's Gate II (like its predecessor) has an impressively nonlinear structure. Many computer-based RPGs usher you through predetermined tasks in a set order. That flies in the face of traditional (noncomputer) RPG design, where players must continually decide which tasks to attempt, which ones to stall on, and which to ignore entirely. Baldur's Gate tends to simply give you a large number of quests and let you decide which ones to attempt and in what order.

Early adopters of Mac OS X will appreciate the fact that Baldur's Gate ships with a Mac OS X–native version, along with a traditional Mac OS one. Play in the OS X version is generally smooth and stable, although we experienced occasional crashes (which took us back to the Finder, as you'd expect of Mac OS X crashes), and problems ejecting the CD during disc swaps. The game is massive—a full installation will eat well over 2.5GB of your hard drive.

Baldur's Gate II is an impressive game. While it won't necessarily appeal to beginners—or to those who simply prefer to mow down opponents instead of exploring a complex world—experienced RPG addicts will appreciate the game's complexity and attention to detail.—*Ian Sammis*

The Journal helps you keep track of which quests you complete—or which ones you promised to complete.

good news: Rich, detailed RPG. Nonlinear structure. Mac OS X native.
bad news: Unstable in Mac OS X.

freakin' awesome!

Baldur-Fu: The Art of Combat in Baldur's Gate II

Diablo players may find themselves a bit intimidated the first time combat breaks out in Baldur's Gate II. With six characters to control (simultaneously in the single-player game!), the usual "click on opponents until they die" strategy won't work. So, how's a gamer supposed to handle the baddies of the Realms? Here are a few pointers:

Pause Frequently The single most important combat technique in Baldur's Gate II is frequent pausing. Remember, the Baldur's Gate combat engine is based on that of AD&D, where the players tell the dungeon master what they want their characters to do in incredibly short, baby-step increments. Instead of trying a Diablo II–style, real-time charge, pause the game, tell each character what to do, resume play and watch the results, then pause again.

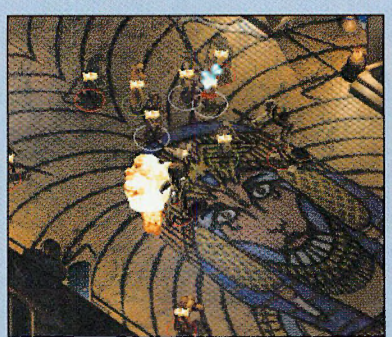
Time out! Putting the game on pause is your secret weapon.

Remember Relative Speeds It takes varying amounts of time to complete different actions. Swinging a scimitar won't take long at all, but casting a complex spell requires a character to wave around his or her hands and chant for several seconds. If you get hit during that time, the spell will break and you won't have accomplished anything.

Protect Your Spellcasters Spellcasters (particularly mages) in AD&D have a tendency to run about in dungeons entirely unprotected by armor and wielding only the puniest of weapons. That means if your mages go toe to toe with even relatively weak monsters, they're apt to get sliced into ribbons. Use your big, burly (and, more important, heavily armored) warriors to hold off monsters while your Spellcasters lurk in the background casting spells (or, when they run out of spells, lobbing sling bullets and daggers).

Wizards are wusses—don't expect them to fight.

Be Careful with Area-Effect Spells Some spells, like Magic Missile, are exceedingly well behaved—they hit their target, then vanish. Most spells are a bit less selective. Launch a Fireball at close range, and you're apt to wipe out your opponents *and* your party in one fell swoop.



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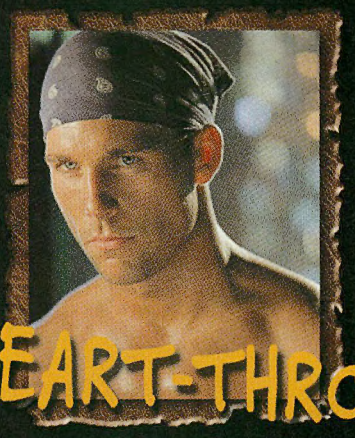
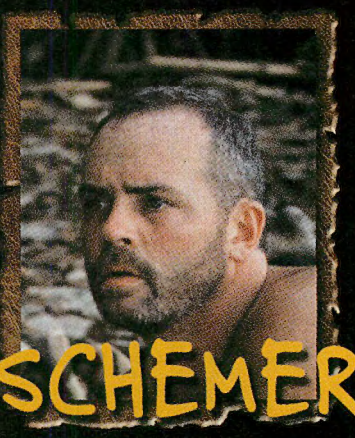
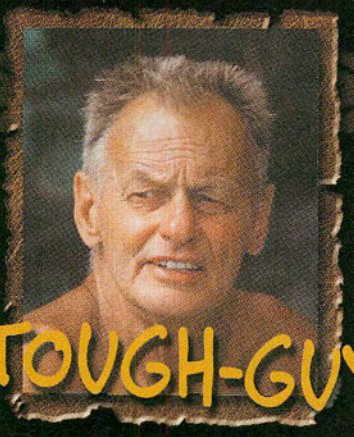


HEART-THROB



SCHEMER



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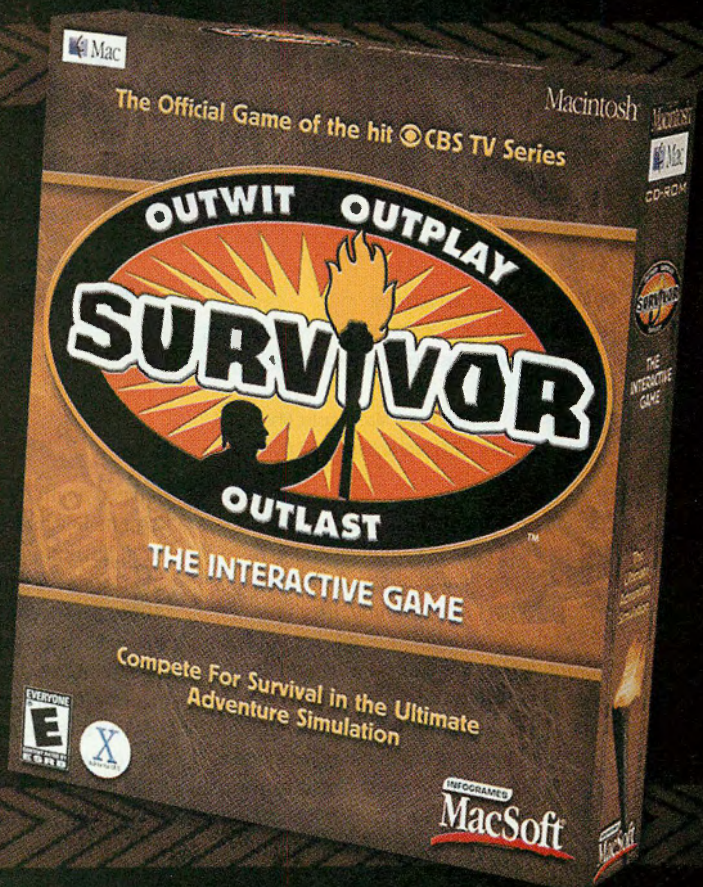

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Mac

PC CD ROM

Built for Mac OS X

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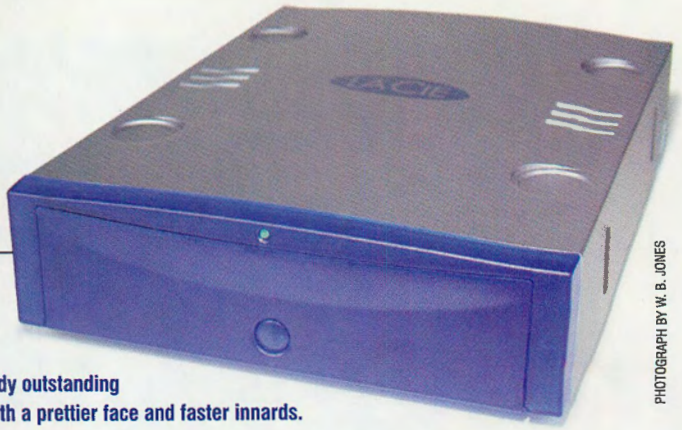
LaCie U&I CD-RW Drive

hardware

Company: LaCie
Contact: 800-288-9919, www.lacie.com
Price: $329 (SRP)
Requirements: Power Mac, Mac OS 8.6–9.x, built-in FireWire or USB port



PHOTOGRAPH BY W. B. JONES

LaCie improves its already outstanding FireWire-USB CD-RW with a prettier face and faster innards.

A mere four issues ago, we were waxing poetic about how blazingly quick the new crop of 16X CD burners were. That's old hat now. These days, 24X burn speed is the buzzword in the CD-RW industry, and LaCie's latest 24X U&I CD-RW drive does not disappoint in speed or performance.

The U&I (LaCie's marriage of USB and IEEE 1394 technologies) CD-RW features a 24X write/10X rewrite/40X read drive wrapped in a silver casing with a translucent cobalt faceplate and belly—a dramatic visual improvement over LaCie's previous bare-faced 16X CD-RW (*Reviews*, Aug/01, p51). The drive ships with USB and FireWire cables and comes bundled with Roxio Toast Lite 5.0.1. No Mac OS X support was available at press time, but Roxio intends to post a Toast Lite update on its Web site (www.roxio.com), which will make the drive OS X friendly.

With dual FireWire and USB support, LaCie's U&I drive offers easy compatibility with the computer masses should you need to burn bytes from the Wintel wasteland. And it does the job flawlessly. FireWire burn speeds are quick—the U&I copied 646.5MB of hard drive data in 4 minutes and 10 seconds, for example. The drive cloned 586.9MB of CD data in just 4 minutes and 9 seconds, and it ripped and burned a 60-minute audio CD in 10 minutes and 17 seconds.

Our one complaint? The drive's fan is noisy—not quite as noisy as a space heater, but we could hear it over a cluster of cackling coworkers. Of course, the handy-dandy on-off switch will kill the white noise according to your whims. Noise aside, LaCie's U&I CD-RW is even better than its previous incarnation, and it's a worthy buy.—*Kris Fong*

good news: Quick and consistent burns. Supports FireWire and USB.
bad news: Noisy.

The Magic School Bus Volcano Adventure

kids' stuff

Company: Microsoft and Scholastic
Contact: 716-871-2915 or 888-218-5617, www.microsoft.com/kids or www.scholastic.com/magicschoolbus
Price: $19.95 (ESP)
Requirements: 233MHz Power Mac or faster, Mac OS 8.1 or later, 32MB RAM, 15MB hard disk space, 4X CD-ROM

Gas and lava don't mix, kids.

The twirly-haired, crackly-voiced Ms. Frizzle is back, along with her magic school bus and class of overachieving kids. This time, they're exploring volcanoes. The Magic School Bus Volcano Adventure offers a wide and healthy range of education and entertainment. But while activities are numerous, most skimp on content, leaving you thirsting for more information about our explosive little friends.

Activities include a world volcano map that would be pretty cool if it bothered to tell you anything about the volcanoes, and a game in which you must save houses from becoming lava lunch by putting down blockades—it's mildly entertaining for about 90 seconds. Other activities aren't as lame, such as the Frogger-type game where you maneuver the magic bus across a lava river by jumping on logs and the like.

The best activities offer more engaging bits of knowledge in interactive ways. For instance, the make-your-own-volcano lab lets you experiment with thicknesses of lava and varying levels of gassiness to show you how different types of volcanoes form. Another activity feeds you fun facts about four major volcanoes, such as how loud they sounded when they erupted and what kind of lava they spit out. Very cool. Unfortunately, there's just not enough very cool stuff on this CD to engross you for long.—*Cathy Lu*

good news: Good mix of games and education. A few interesting facts and figures. **bad news:** A bit shallow on content. Some activities are laaaame.

Graphire2

hardware

Company: Wacom
Contact: 800-922-9348, www.wacom.com
Price: $99.95 (SRP)
Requirements: USB-equipped Mac

PHOTOGRAPH BY W. B. JONES

The Graphire2 package gives you 512 levels of pressure sensitivity for $99.95—mouse included.

We like the Graphire a lot more now than the last time we reviewed it (*Reviews*, May/00, p58). The new Graphire2 pen, mouse, and tablet package has better drivers, which provide greater system stability and more options for customizing your setup. Like many vendors of peripherals, Wacom plans to release Mac OS X drivers when Apple releases Mac OS 10.1.

Installation was easy, though we experienced occasional extension conflicts until we updated the drivers to version 4.70-6 via Wacom's support site (www.wacom.com/productsupport). Starving artists will appreciate the bundled software—especially Adobe Photoshop 5.0 LE and Corel's Painter Classic.

The pen, with an advertised 512 levels of pressure sensitivity, is the real reason to buy the Graphire2. Although we can't attest to experiencing all 512 levels, we found that in addition to performing normal mouse tasks, we could vary paint strokes using the weighted brushes in Painter and edit pixel by pixel in Photoshop. The pen comes with a programmable DuoSwitch you can use to double-click, assign keystroke commands, or execute predefined macros. For example, we customized our switches to check mail in Qualcomm's Eudora and control pen sensitivity in Adobe Illustrator.

The cordless mouse is anatomically perfect, with two programmable buttons and a scroll wheel, but it's still the weakest link. It's too large for the tablet, and feels unresponsive and chintzy.

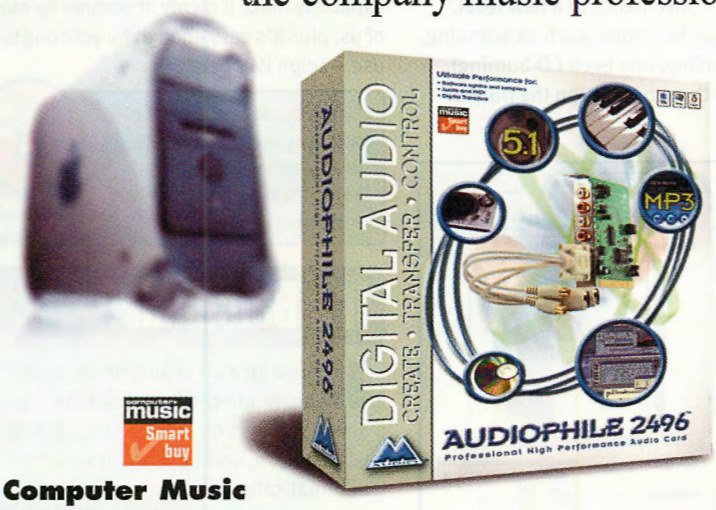
Given the flaky mouse and the tablet's small size, the Graphire2 works best as a complement to, not a replacement for, an old-school mouse. The pressure-sensitive pen is the main reason for considering the Graphire2, and it's reason enough for any casual artist.

—*Narasu Rebbapragada*

good news: Affordable. Programmable. **bad news:** Clunky mouse. Limited tablet space.

Reality Audio

Award-winning audio technology for your Mac from the company music professionals trust: M-Audio.



Music professionals are uncompromising when it comes to the fidelity and performance of their soundcards. They don't just demand the best; they demand reality.

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Computer Music Magazine says of the Audiophile: *"How does it sound? Well, in a word, stunning."*

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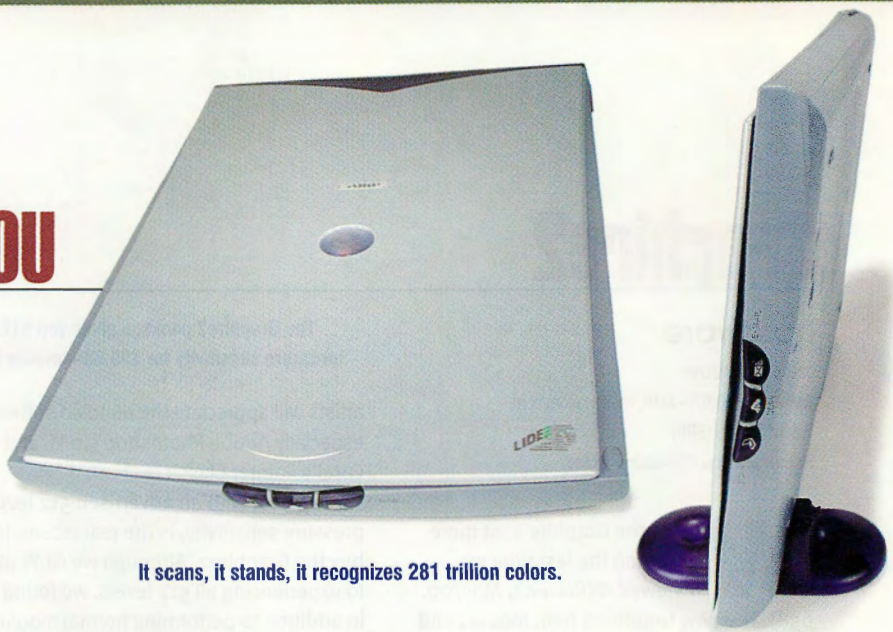
CanoScan N1240U

hardware

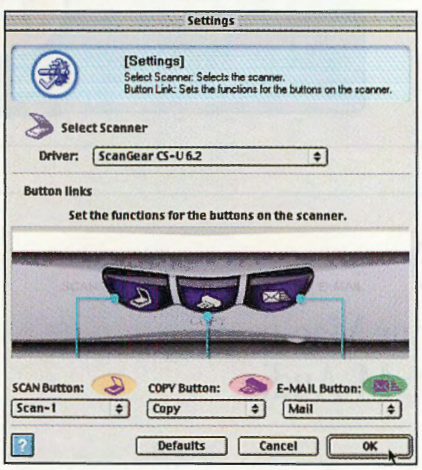
Company: Canon
Contact: 800-652-2666, http://consumer.usa.canon.com
Price: $199 (SRP)
Requirements: G3 or faster, Mac OS 8.6 or later, native USB (excludes add-on USB cards), 64MB RAM, CD-ROM drive



It scans, it stands, it recognizes 281 trillion colors.

PHOTOGRAPH BY W. B. JONES

Remember when scanners were bulky, beige, and generally boring? We don't, not after getting our mitts on Canon's latest CanoScan. And the N1240U is more than just a pretty case: more to the tune of 1,200-by-2,400-dpi resolution and 48-bit color capability. Like its two *Freakin' Awesome* predecessors, the CanoScan N656U and N1220U (*Reviews*, Oct/00, p54, and Jan/01, p68, respectively), the CanoScan N1240U brings excellent form and function to the desktop.



Programmable buttons put scan, copy, email, and other functions a click away.

Essential to the N1240U is its upgrade to a 48-bit (from 42-bit) CIS (Contact Image Sensor) that can recognize up to 281 trillion colors. That's *trillion* with a capital *T*, and it's still the best-looking flatbed scanner we've ever seen. If weren't for the fact that you can stow the N1240U (complete with its attachable blue plastic foot) vertically on its side, you might even confuse the scanner with your Titanium PowerBook.

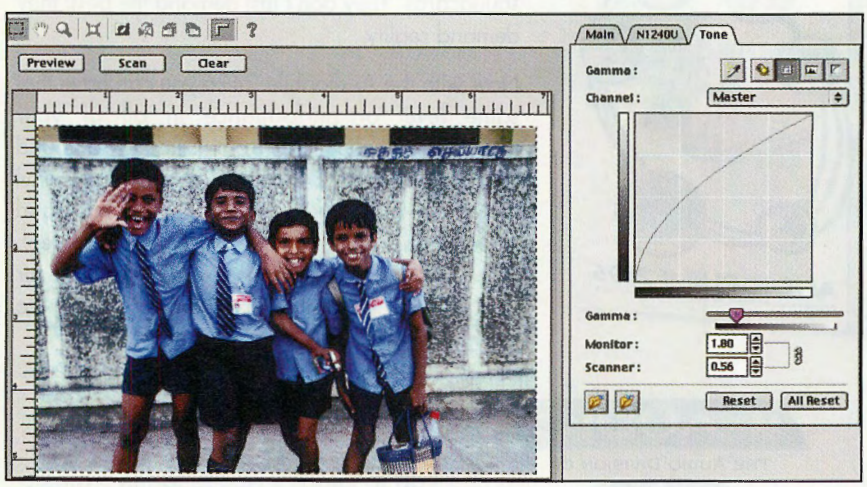
The N1240U builds on the CanoScan family's traditionally generous software bundle by adding Photoshop Elements to the mix of OmniPage OCR, ArcSoft's PhotoStudio and PhotoBase, and the ScanGear ToolBox—a handy interface for all the scanner software. This model brings push-button convenience to a new level. You can assign functions (such as scanning, copying, emailing, and even CD-burning) to any of the three buttons on the front of the scanner.

Color images came out on the dark side when we used the N1240U's low-res Simple mode, but this problem disappeared with a little help from ScanGear's Advanced mode—or Photoshop Elements. Image detail and sharpness were both very impressive when we scanned color images and line art at a high resolution.

The N1240U's bus-powered USB connection means one less power cord cluttering your desk, but the tradeoff is USB's relatively slow transfer speed. In fact, the software issues a go-make-a-sandwich warning when you're about to scan a really big file, such as a 5 by 7 image at 1,200 dpi.

The N1240U runs in OS X's Classic mode, and a Carbonized driver is due soon. It can't scan transparencies, and its 8.5 by 11.7 bed size may be limiting, but the N1240U's hip look, high resolution, and higher color capability make it plenty of scanner for most of us, plus it's easy enough for your dog to use.—*Leigh Webber*

good news: 48 bits equal 281 trillion colors. Easy, one-touch scanning. Sleek, svelte design. **bad news:** Can't handle slides or transparencies. Large scans slow over USB.



PHOTOGRAPH BY LEIGH WEBBER

Advanced Mode offers several controls for tweaking tonal range.

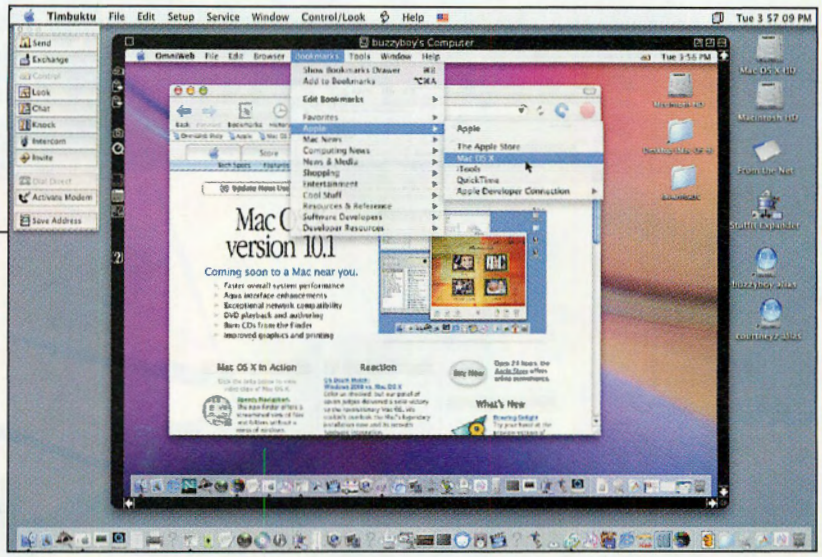
It's Batchable!

If you scan a lot of snapshots, Multi-Photo Mode can save you time. Place several images on the scanner, click the Scan button, and the CanoScan automatically scans, crops, deskews, and saves each of the images individually. There's no sheet feeder available, so unless you've got a trained monkey, batch scanning is limited to what you can fit on the 8.5 by 11.7 bed.

Timbuktu Pro 6

utilities

Company: Netopia
Contact: 800-485-5741 or 510-814-5000, www.netopia.com
Price: $94.95 download; $99.95 boxed
Requirements: Mac OS 8.6–9.x, or Mac OS X 10.0.4 or later (separate versions supplied for each); 16MB RAM; 15MB free hard disk space



X on X: Control any other Timbuktu-equipped machine from the comfort of your own Mac.

Find a Timbuktu Pro 6 demo on The Disc.

Timbuktu has been around forever, and a veritable army of savvy users relies heavily upon it for remotely controlling and maintaining computers. Each and every Timbuktu junkie should be dancing in the streets right about now, because Timbuktu Pro is available for Mac OS X. For the uninitiated, it's an easy, secure way to tap Mac OS X's vaunted Unix networking capabilities.

Timbuktu allows you to control any computer—Mac or PC, desktop client or server—remotely, either via the Internet (TCP/IP) or over a local network. As long as both computers (yours and the target machine) have Timbuktu installed, you can control the remote computer, transfer data, or chat (voice chat included). If you have a remote Web server, Timbuktu is indispensable for secure file transfer and for remote configuration and general maintenance.

Timbuktu Pro 6 ships with two versions, one for Mac OS 8.6 or later and one for Mac OS 10.0.4 or later. These are identical, except that the OS X version doesn't allow AppleTalk connectivity. New features in version 6 include the ability to copy multigigabyte files, as well as data encryption between host and guest computers for improved security.

Configuring Timbuktu is simple and using it is even simpler. Netopia, Timbuktu's developer, allows you to register your email address with its servers, so other users need only remember a simple email address instead of an IP number, which is typically 8 to 12 digits long. This comes in especially handy if you have a dynamic IP address.

What about connecting through my Airport Base Station or Linksys router, you say? It's possible to connect through a firewall or access router with Timbuktu—just open the appropriate port (Timbuktu uses port 407 by default) in your firewall. If you use AirPort, you can use the AirPort Admin Utility—just choose Port Mapping from the Network section in the Base Station Configuration window. (See "Timbuktu You," below, for links to additional setup help.)

Timbuktu Pro's price may be a bit steep for casual users—especially considering that VNC (Virtual Network Computing) software, which accomplishes many of the same tasks, is available free on the Web. However, Timbuktu is much more user-friendly, and since you can use Timbuktu's Intercom feature to transmit voice back and forth between Timbuktu-equipped computers (even ones with Timbuktu 2000 for Windows), you can offset the price by saving a few bucks on long-distance phone bills.—*Buz Zoller*

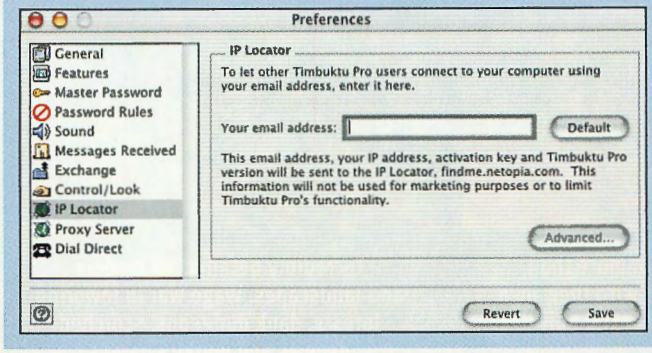
good news: Plays well with older and Windows versions. Audio Intercom chat. Easy, secure remote access. **bad news:** No AppleTalk connectivity in Mac OS X version.

Timbuktu You

Got a dial-up, DHCP, or PPPoE Internet connection that assigns you a different IP address every time you log on? No worries: Timbuktu's Internet Locator lets guest users connect to your machine by entering your email address, which shouldn't change nearly as often as a dynamic IP does.

Turn it on by choosing Preferences from the Setup menu, selecting the IP Locator tab, then entering your email address in the designated box. With Locator enabled, every time you fire up Timbuktu the program transmits your current IP address to Netopia's designated server, which then dishes it out when other users request access via your email address.

Foolproof? Not quite; Internet Locator has some issues with network firewalls and proxy servers (like Apple's AirPort), but Netopia's FAQ page (www.netopia.com/support/faqs/software/tb2macfaq.html) and Technote page (www.netopia.com/support/technotes/software/tb2mac) are chock-full of information to help you get connected.



Entering your email address here lets Timbuktu lead guests right to your door—er, desktop.

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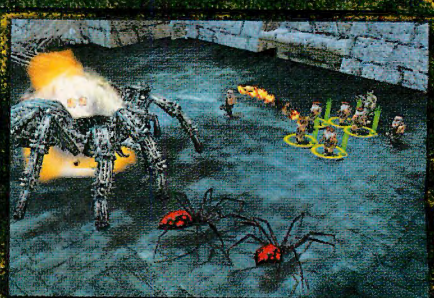
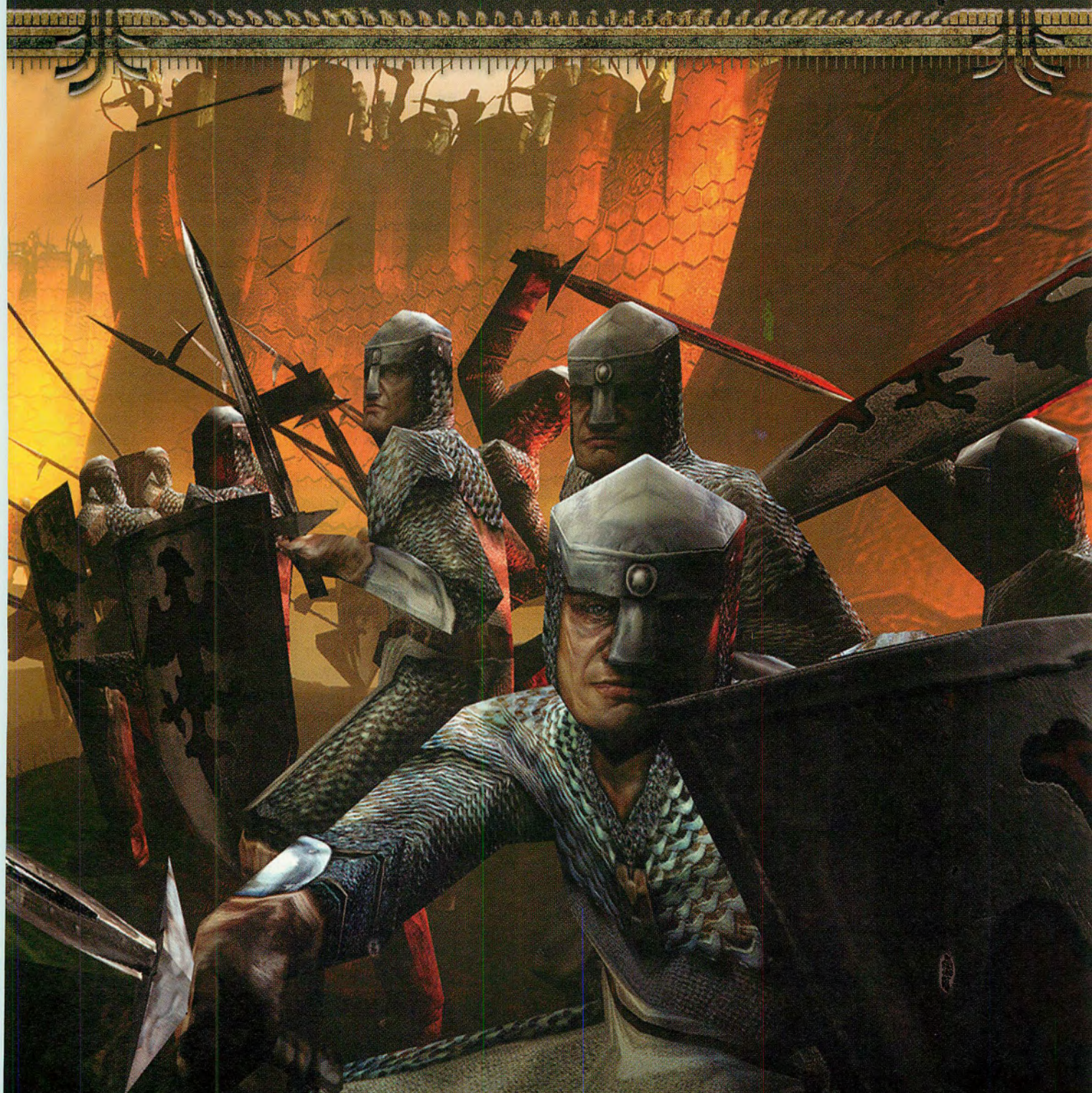


Conquer 25 single-player maps as you live an epic tale of heroism and battle

"If you are a fan of the first two MYTH games, do not hesitate to look forward to MYTH III. The game looks great!" —Inside Mac Games



"...the future of the MYTH series looks bright indeed."—GAMESPOT

MATURE M CONTENT RATED BY ESRB

Blood & Gore
Violence

Mac

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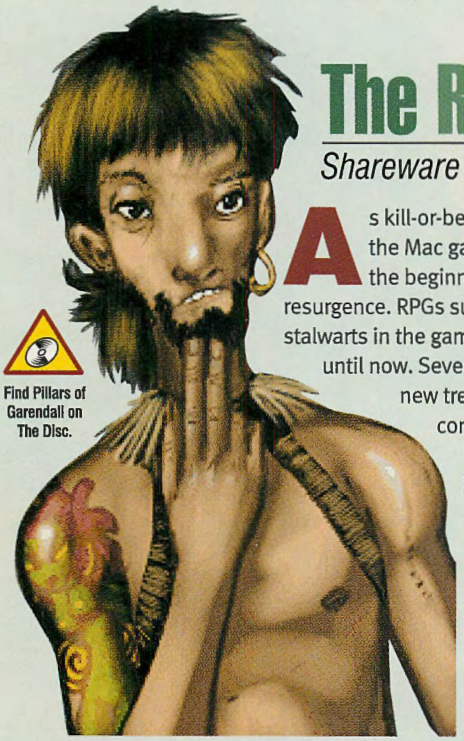
powerplay

Role-playing games get social.



Find Pillars of Garendall on The Disc.

The Resurgence of RPGs

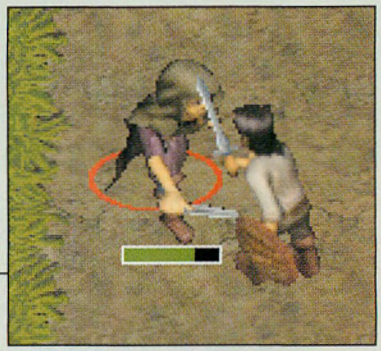
Shareware Developers Take the Lead

As kill-or-be-killed games continue to infiltrate the Mac gaming market, it's refreshing to see the beginnings of an RPG (role-playing game) resurgence. RPGs such as Baldur's Gate and Fallout, once stalwarts in the gaming industry, have been on the decline—until now. Several developers are at the helm of this new trend, but this time it's not the big companies—it's the little guys.

Choices, choices...enter Arcane Arena, choose your enemy, and plan your fate.

Role-Playing for the Masses

MMORPG, or *massively multiplayer online role-playing game,* isn't exactly a familiar term to the average Mac gamer. This new form of RPG lets hundreds of players from all over the world interact with each other rather than with computer-generated friends and foes. Just enter an online world, create your own character, interact with other players on your quest, and exit when you want to—though your character may be absent, the game continues much as the world does when you go to sleep each night.



Pillars of Garendall reminds you there's nothing quite like swinging a blade into the skull of an enemy.

For over a year, PC folks have been spending their lives wrapped up in a continuous online game called EverQuest. There's no longer any need to feel pangs of jealousy, though—shareware developer Freeverse Software (www.freeverse.com) is bringing its online, never-ending game, Arcane Arena, to the Mac. Currently in beta, this server-client–based fantasy RPG should satisfy folks who hate to see games come to an end. Log on, and you'll find yourself gaining points and money by defeating monsters, buying yourself some snazzy weapons and armor, and talking with other players in real time (thanks to the built-in chat, which is similar to instant messaging).

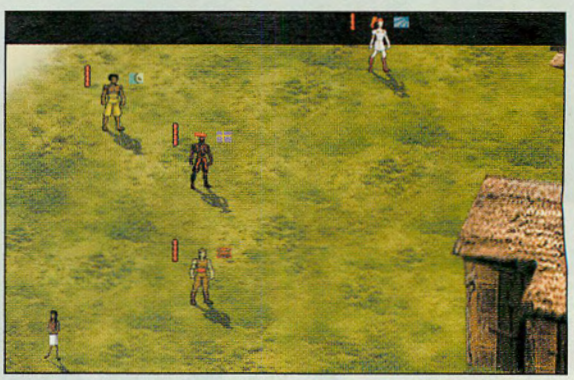
At press time, Blizzard Entertainment announced its own MMORPG called World of Warcraft. While Blizzard only announced this game for the PC market, the company may still bring it to the Mac. Let's hope it does.

Role-Playing for Hermits

If life among the Web masses makes you feel bashful, perhaps you'll be more comfy tackling a solo adventure. Ambrosia Software (www.ambrosiasw.com) and Beenox (www.beenox.com) have released Pillars of Garendall. This classic-style, single-player RPG has you playing a hero on a mission to save your city from destruction.

Beenox created Pillars using its own Coldstone Game Engine, a still-in-beta (at press time) RPG creation tool. With the Coldstone Game Engine software, any ambitious Mac user can design games that take place anywhere, such as in outer space or in a medieval kingdom, complete with custom windows, graphics, sound and music, cut scenes, and more. If you're looking to see the RPG thrive once again, get yourself a copy of Coldstone and develop the next big RPG yourself.

—Andrew Tokuda



Forget your trigger finger. Arcane Arena lets you take a whiff of fresh air from time to time.

SCREENSHOT OF THE MONTH

The modern-day answer to the ol' magic-flying-carpet ride.

Artist's Statement

Here is a shot of Tony Hawk—a bug in the level allowed me to fly freely for about half an hour without landing!—*Louis P.J. Plante*

Send your best screenshots to letters@macaddict.com with the subject line "Screenshot of the Month" if you crave fame and glory (or at least fleeting satisfaction upon seeing your screenshot in a magazine).

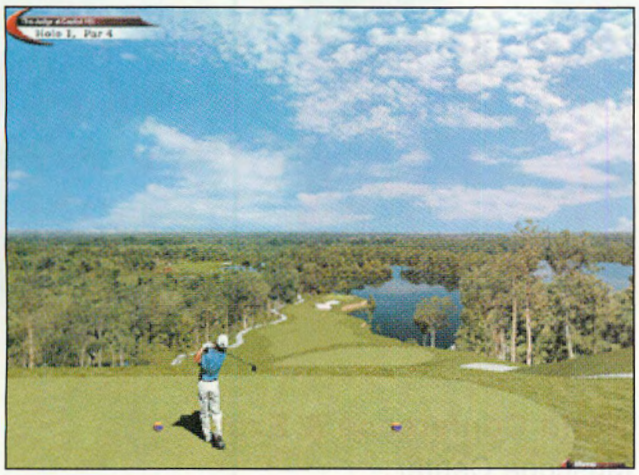
For Tamte, It's Destineer

For Mac Gamers, It's Time to Play!

Any longtime Mac addict oughtta know who Peter Tamte is—especially if you're a self-described gaming freak. For the uninitiated, Tamte has held illustrious positions such as VP of Bungie Software Products (before Microsoft bought Bungie), founder of the hugely successful Mac gaming company MacSoft, and manager of Apple's consumer marketing affairs (under some guy named Steve Jobs). We last spoke with Tamte (*Powerplay*, Oct/00, p68) as he made the leap from Bungie to launch his own Destineer Studios (where he currently holds the title of president). We were curious to see what he and his company have been up to lately.—*Kris Fong*

***MA:* Destineer Studios appears to have split into two companies—Destineer and Bold. What is the distinction between the two?**

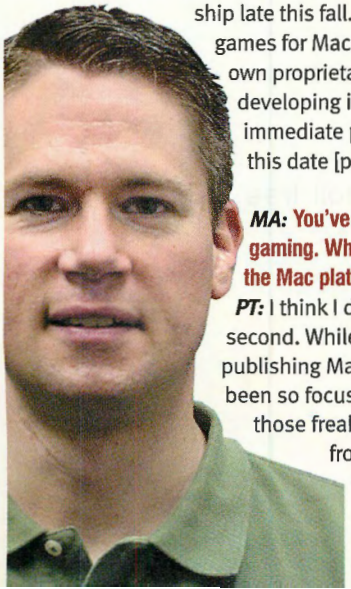
PT: Destineer Studios is the label through which we are creating our original games. Bold is the label we will use when bringing other companies' games to the Macintosh.



Avoid those embarrassing stares if you suck on the green in real life—you can hide your handicap behind a Mac screen in Links 2002.

***MA:* What games do you plan to ship in coming months for both Destineer and Bold?**

PT: First, we will bring many of Microsoft's most popular games to the Macintosh, such as Age of Empires II and Links 2002, which will both ship late this fall. Second, we are creating original games for Macs, PCs, and video consoles using our own proprietary 3D technology, which we are developing in-house. We don't have any immediate plans to announce more titles before this date [press time], but more will be coming.



Peter Tamte—a high-profile Mac freak whose self-proclaimed mission is "saving the world from mediocrity."

***MA:* You've had a long, successful career in Mac gaming. What drives you to stick with this field and the Mac platform?**

PT: I think I do things out of love first and money second. While there is money to be made publishing Macintosh games, the real reason I've been so focused on the Mac is that I am one of those freaks who thinks he is saving the world from mediocrity by bringing interesting things to the Macintosh community.

Mac addicts banging on game publishers' gates, begging for the Mac version? You can thank Tamte and company for porting Age of Empires II.

Many of the decisions I've made about which games to bring to the Mac, even from the beginnings of MacSoft, were based on my wanting to play a particular game on my Mac.

***MA:* In your opinion, what does the future hold for Mac gaming?**

PT: I think the most important things about the future of Mac gaming are Mac OS X and the coolness of Apple's new hardware. Once Mac OS X is fully functional, there is a really good chance it's going to cause a lot more people—especially people from the Unix and Linux communities—to be interested in the Macintosh as a solution. Also, Apple's newest machines, especially the TiBook and iBook, are really showing people how much cooler Apple's computers are than the Wintel clones. In fact, I've even thought about switching back to my old black G3 PowerBook on airplane flights because every time I pull out my Titanium, I get a line of people next to my seat asking 20 questions about it. I never get any work done.

***MA:* Do you think Apple needs to refine its products in any way to be more game friendly?**

PT: Sure, technology moves at a fast pace. Hardware and software design is a moving target, so we're always communicating things to Apple privately about what we'd like to see in future hardware and software. The most important things Apple can do for us is to keep making progress on Mac OS X, which they're doing, and sell more computers.

Beyond that, the most important thing for Mac gamers is up to us publishers. We need to start bringing out the most exciting Mac games near-simultaneously with the Wintel versions. For example, Destineer will be releasing the Mac version of Links Championship Edition 2002 within just a few weeks of the Wintel release, and we will be shipping Gold Edition of Age of Empires II within just a few weeks of when Microsoft ships it for Wintel. I hope we can do this with a number of titles during 2002.

***MA:* Which of your upcoming games excites you the most and why?**

PT: Each game excites me for different reasons. I love empire-building games like Civilization and real-time strategy games like C & C [Command & Conquer], so Age of Empires II is the perfect game for me. Links is the definitive golf simulation, and the new version has much better graphics than before, so I'm excited about Links, too.

***MA:* What game are you playing now?**

PT: Well, we're beta-testing Age of Empires II right now. So it's safe to say it's the game I'm playing the most right now.

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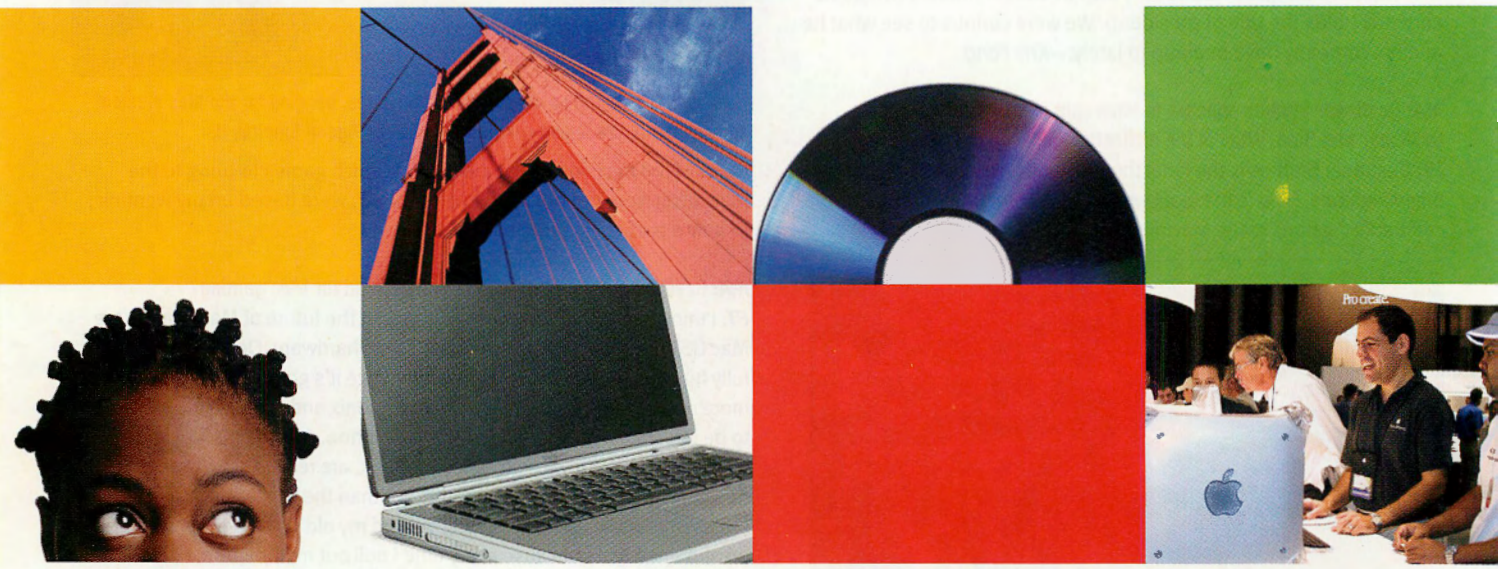

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how to

Sometimes faking it is the best means to an end.

PHOTO COURTESY OF PAT MCGREAL/STEPHEN JOHN PHILLIPS/STEVEN PARKE, VERTIGO/DC COMICS

Build a Photomontage

TRICKY

by Steven Parke and Kris Fong

WHAT YOU NEED

- **Photoshop, Photoshop tryout (on The Disc), or a comparable image editor**
- **Tutorial photos (on The Disc)**

TOUGH

This stuff's for the pros.

TRICKY

It'll take some effort, but you can do it.

EASY

The fundamentals, if you will.

Someone hands you a storyboard sketch of DC Comics' first-ever photographic novel, *I, Paparazzi* (Vertigo/DC). The premise: Protagonist Jake "Monster" McGowran strolls through New York City's Central Park, dwarfed by a ghostly obelisk, when suddenly the clouds begin to swirl oddly, opening a hole to the sky. Your assignment: Photograph this scenario. Great, how on earth are you going to pull off this one?

Easily. Just fabricate it. With image editors such as Adobe Photoshop ($609, www.adobe.com), Deneba Canvas ($375, www.deneba.com), and ArcSoft PhotoStudio ($99.99, www.arcsoft.com), you can use layers of images to build a scene that would be impossible to capture in real life.

The circumstance mentioned is an actual situation. Digital artist Steven Parke was hired to illustrate *I, Paparazzi*'s storyline photographically with individual panels, like those seen in comic books. Because the book's plot unfolds in a dark, dramatically lit, surrealistic setting, straight photography wouldn't cut it. Building a photomontage—an image created by layering and fusing together individual photos—does the job.

Here, we show you how to make your vision a reality by constructing a photomontage from a handful of images. We not only demonstrate how Parke created the above panel from three photos, but also give you a couple ways to fake elements in a scene if photographing the real-life situation is impossible. We use Photoshop in this how-to, but you can follow these steps using the image editor of your choice.

Build this image—find the individual raw images and a Photoshop 6.0 tryout on The Disc.

ROUND UP THE RAW IMAGES (FIND 'EM ON THE DISC)

Parke's photomontage is constructed from three images set into a paneled guide, which serves as a frame for the final image (like the frame panels seen in traditional comic books). Photographer Stephen John Phillips shot the photo of the main character, but Parke still needed an obelisk and swirling clouds. Luckily, Parke found an obelisk only a mile away from his house and snapped a picture of it late at night, making it easier to blend the image with the other dark elements of the photomontage.

Creating the cloud element required a little more artistic ingenuity. Parke used a stock photo of a hurricane eye for its swirling properties, knowing he could manipulate it in Photoshop to achieve the cloud effect he required.

Now's your chance to build Parke's image on your own. Locate the three raw image files and the minirule guide in the Photomontage Tutorial folder on The Disc and copy them to your hard drive. Then fire up Photoshop or a comparable image editor, and follow Parke's directions.

MONSTER

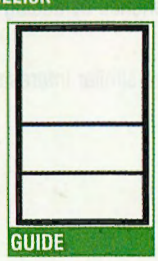
PHOTO BY STEPHEN JOHN PHILLIPS

OBELISK

PHOTO BY STEVEN PARKE

HURRICANE

PHOTO BY NASA/CORBIS



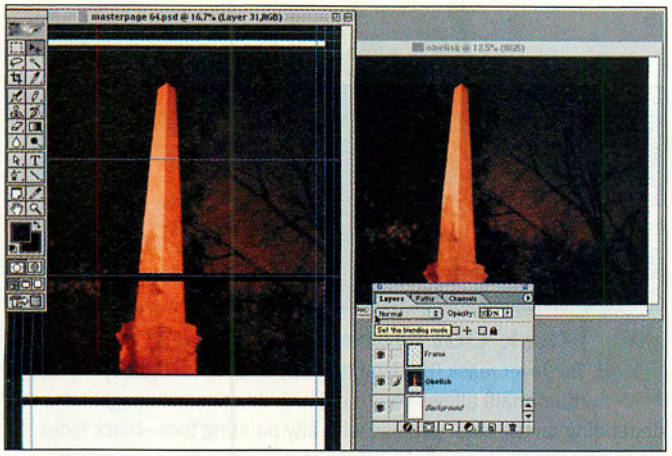
GUIDE

More on *I, Paparazzi*

By the time you read this, *I, Paparazzi*, which features the artwork shown in this tutorial, will be in stores. This hardbound graphic novel features full-color panels of photography and reads like a movie. The noirish storyline follows New York paparazzo Jake "Monster" McGowran in his pursuit of celebrities and the perfect picture.

The book was designed completely on Macs and combines traditional film and digital photographs. You'll find several celebrity cameos from the music, film, and art worlds sprinkled through the pages, plus some actors morphing into odd reptilian creatures...no kidding!

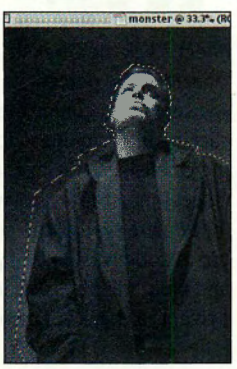
PUT THE PIECES TOGETHER



1 Paste the Obelisk into the Guide

In Photoshop, first open the guide file, minirule64.psd (this layered file has a background layer and a frame layer and serves as our page guide), and then the obelisk.tif file. Select the entire obelisk image (Command-A), copy it (Command-C), click the minirule64.psd image, and then paste the obelisk into a new layer (Command-V). Rename this new layer by double-clicking it in the Layers palette and typing *Obelisk* in the Name field. Save this new file as a Photoshop document (PSD). This file is the *master page*. Move the Obelisk layer below the frame guide by dragging it in between the Background and Frame layers in the Layers palette. Then move the obelisk image using the move tool so it's centered in the top frame of the guide (as pictured).

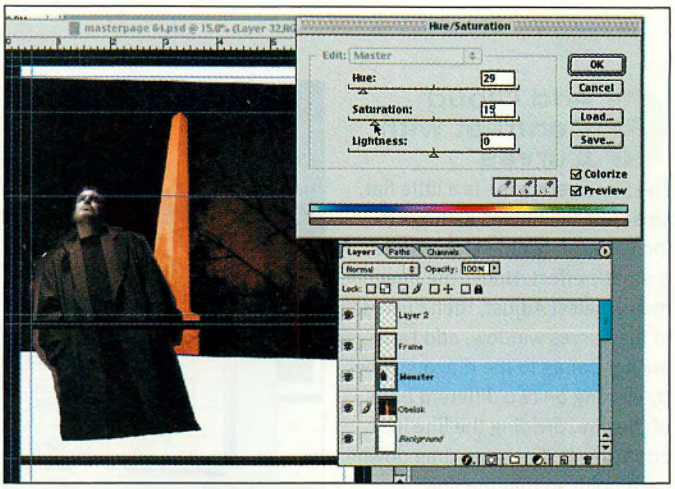
2 Copy Monster into the Guide



Next, open the monster.tif file—the protagonist. Select the lasso tool, set Feather in the Lasso Options palette to 0 pixels, and use your mouse to draw an outline around the entire figure. Copy your selection (Command-C), go back to the master page file, and paste the selection into a new layer (Command-V). Rename this layer *Monster* and move it below the Frame layer but above the Obelisk layer in the Layers palette.

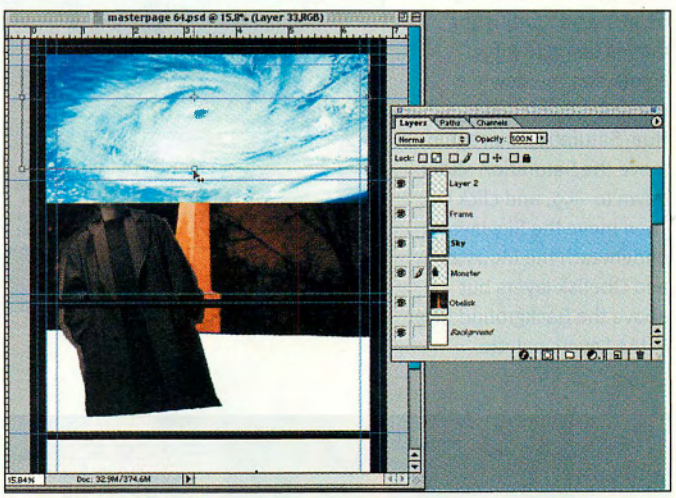
3 Scale Down Monster

Scale down Monster to fit the scene. To do this, select the Monster layer, and then select Free Transform from the Edit menu—a bounding box surrounding the figure will appear, with eight handles (shown as tiny squares). By grabbing and dragging these handles, you can adjust the figure's size and rotation. To size it down, click any corner handle, hold down the Shift key (to maintain the size ratio), and drag the bounding box inward until Monster has the figure-to-surroundings ratio shown. Next, click the middle portion of the bounding box and drag the figure to the left of the obelisk. Then place your cursor just outside one of the corner handles and rotate the figure counterclockwise so that he stands at an angle to the obelisk. Double-click inside the bounding box to save these changes.



4 Add Color to Monster

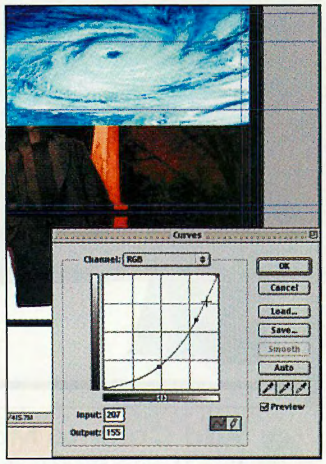
Next, Monster needs to change from black and white to color so he matches his surroundings. Under the Image menu, select Adjust, then Hue/Saturation. Check the Colorize box, and move the Hue slider to 29 and the Saturation slider to 15. Then click OK. These settings give our character a sepia tone, which complements the obelisk's orangy glow.



5 Add the Hurricane to the Sky

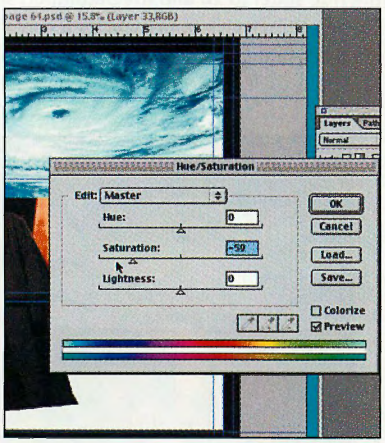
The sky is the last photographic element to add to the master page. Open hurricane.tif, use the rectangular marquee tool (it looks like a dotted rectangle) to select a good amount of the swirling clouds while keeping the hurricane eye centered, copy this area (Command-C), click the master page image, and then paste the hurricane eye into a new layer (Command-V). Rename this layer Sky and place it under the Frame layer but above the Monster layer in the Layers palette. To give the illusion that a swirling sky is opening upward, flip the Sky layer upside down by selecting Transform from the Edit menu, then Flip Vertical. Squish the layer to give the hurricane swirl a more elliptical shape by selecting Free Transform under the Edit Menu and dragging down one of the upper-corner handles of the bounding box a little. Then position the hurricane eye directly over the top of the obelisk—set the Sky layer's Opacity to 50 percent in the Layers palette to see the position of the obelisk underneath the eye, and then bring the layer back to 100 percent. Double-click inside the bounding box to save the change.

6 Add Cloud Contrast with Curves

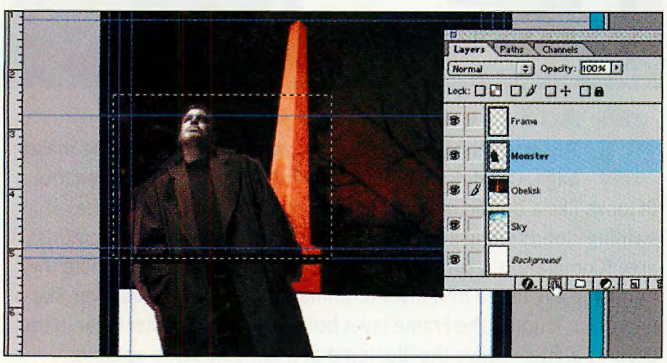


The Sky layer's tone is a little flat, so adjust the Curves settings to increase the contrast for a more dramatic effect. Under the Image menu, select Adjust, then Curves. In the Curves window, add two anchor points to the diagonal line by clicking on two different parts of the line, dividing the line into equal thirds. Click and drag down each point so that the line resembles a steep incline as shown to increase the contrast and dramatically darken the overall tone. Then click OK.

7 Desaturate the Clouds for Drama



The Sky is now too bright to be menacing (adjusting Curves tends to affect color), so tone down the color. Open the Hue/Saturation box again, move the Saturation slider down to –59, and click OK. Then move the Sky layer underneath the Monster and Obelisk layers but above the Background layer in the Layers palette.

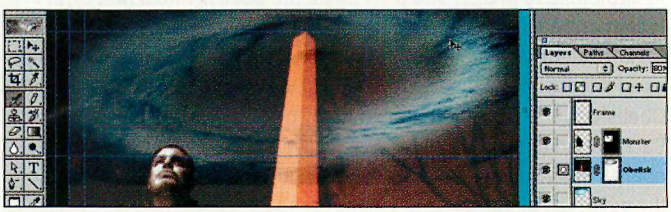


8 Add a Layer Mask for Cleanup

Time to tidy up! Click the Monster layer in the Layers palette—notice how messy your cutout (and ours) is? Also, you won't need any part of the image that lies outside the top panel on the frame guide. To get rid of the extra junk, first select the rectangular marquee tool and draw a box around the parts of Monster that you want to keep (everything within the panel). Then click the layer mask icon (the dotted circle in the square at the bottom of the Layers palette)—this will *mask*, or hide, the area not selected.

9 Mask Out Monster's Edges

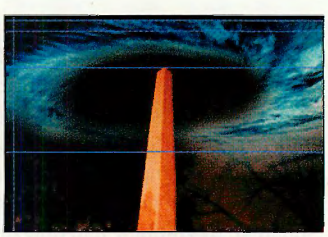
The layer mask (the icon that appears to the right of the image thumbnail) allows you to either hide or reveal image data, depending on the color you use with any painting tool—black hides, white reveals. To clean up the edges of the character, use a small brush (either the airbrush or the paintbrush) with black paint and paint over all background areas to hide them on the Monster layer mask. If you hide (erase) too much, select white paint as the foreground color and paint the image back in as needed.



10 Create the Swirl Effect Using a Layer Mask

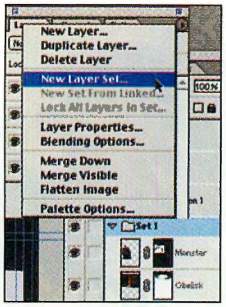
Next, create an obelisk-piercing-the-swirling-skies effect. Click the Obelisk layer in the Layers palette and change its Opacity to 80 percent to see a bit of the Sky layer underneath, which will serve as a guide. Then create a layer mask for the Obelisk layer by clicking the layer mask icon. To create the tempestuous sky effect, click the Obelisk layer's layer mask (the icon to the right of its thumbnail), select the airbrush tool with black paint, and paint an oval shape that follows the swirl of the clouds at the top of the obelisk. (Don't mask out the obelisk itself—if you do so accidentally, switch to white paint and paint the obelisk back in.) Bring the Opacity back up to 100 percent to check your work.

11 Shape the Clouds with a Brush

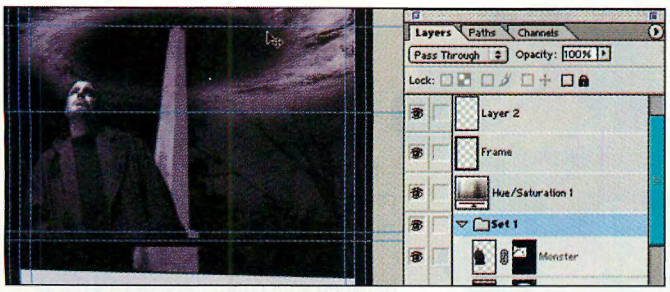


To give the sky more shape and to emphasize its cloud structure, mask out portions of the Obelisk layer, using wispy paint strokes in the same direction as the clouds. Use varying levels of Opacity in the brush's Options palette for a feathery effect. Mask out a good-size doughnut hole above the obelisk to give the illusion that the clouds are rippling away from its point, indicating that something is about to descend from above. Mask out selections between the tree branches to keep the continuity (this requires patience!). To get a better perspective on the relationship between the obelisk and sky, temporarily turn off the Monster layer—click the layer visibility icon (it looks like an eye) on the Monster layer in the Layers palette to toggle that layer on or off.

12 Group All Layers into a Set



When you're satisfied, place the individual layered images into a layer set, which lets you move and adjust layers as a group. Click the palette options button (the triangle in the upper-right corner of the Layers palette) and choose New Layer Set. Drag each photo layer (not the Frame layer) into the set folder in the Layers palette, making sure to keep the layers in the same order. From here, you can make adjustments to the entire image.



13 Tweak the Overall Color for Added Drama

Once again, adjust the hue to give the image a macabre look, but this time make changes to the image as a whole. Under the Layer menu, select New Adjustment Layer, then Hue/Saturation. Next, click OK in the New Layer dialog box to open the Hue/Saturation window. Check the Colorize box, set the Hue slider to 283 and the Saturation slider to 12, and click OK. Your entire image will look purplish. Don't worry—we're not done yet.

14 Reintroduce Color by Masking

On the Hue/Saturation layer in the Layers palette, create a layer mask by clicking the layer mask icon. Use this layer mask to bring back some of the montage's original color. Select a small brush with black paint; in the mask, hide portions of the purple-colored obelisk and Monster so their highlight coloring is prominent, but their shadows are tinged purple. Mask out small portions between the tree branches to reintroduce some of the reddish sky behind the obelisk, too.

For emphasis, add a few stars in the clear sky visible through the cloud opening. Under the Layer menu, select New, then Layer to create a new layer. In the New Layer dialog box, set the Mode to Lighten in the drop-down menu and click OK. Position this new layer on top of the Obelisk layer in the Layers palette. Set white as the foreground color in the Tool palette, select the airbrush tool, and then speckle the clear sky, using varying small brush sizes. When you're satisfied, select Flatten Image from the Layer menu and save the image as a TIFF file.

Mission Impossible? Try This!

Fooling the eye is every Photoshop wizard's specialty. While some of the image-editing trickery you see is blatantly obvious—especially in magazine ads—other manipulations are virtually undetectable. Because capturing a particular image in real life isn't always a possibility, graphic artists have relied on a few homespun Photoshop secrets to fake a scene. Here are two tricks to try in your next montage.

Crowd Scenes

Gathering large groups of people and placing them in a scene is a hard task to accomplish. But if you have just a handful of people for subjects or a series of individual photos, you can effectively piece together a crowd in a kind of jigsaw puzzle.

First, take a photo of the background scene you want to use, without any people in front of it. Then take snapshots of the people on hand, with each person posing appropriately for your particular scenario, whether they're running from something, looking surprised, or whatever. Change their clothing, vary the groups of people, and shoot both close-ups and distant shots for more realism. Layer your collection of people pics into the background layer, placing the distant shots toward the back of the scene and the close-ups in the foreground. If you see any noticeable repetition of characters, blur the faces incrementally, with clear images in the foreground and blurrier ones in the background.

Our example party scene full of actors, directors, musicians, and artists doesn't really exist—this gathering was created using individual shots of celebrities, some taken close up and others at a distance. Parke photographed the background at a local club, and then layered in each celebrity one at a time, placing each person in an appropriate spot according to their body positioning. (The photos of Janeane Garofalo, Richard Belzer, and Patton Oswalt are all head shots with body doubles.)

Impossible Angles

Perhaps you have a need to take a photo when it's impossible to position your camera at the right angle—like shooting someone in an elevator from above. In such a case, just find an object with similar properties and fake the setting with Photoshop.

To create a frame, Parke photographed the inside of his mailbox, which had boundaries similar to that of an actual elevator box, with a wide-angle lens. Next, Stephen Jon Phillips shot the four inner panels of a freight elevator as well as the floor; Parke then layered these images onto the four sides of the mailbox image and distorted the elevator images a bit to give the illusion of depth. Finally, Parke added Monster as the elevator passenger.

Artist Steven Parke has spent the last seven years as a one-man art department for recording artist Prince.

Hitch a Ride on Any Broadband Line

EASY

by Leigh Webber

Fighting over the remote control is old hat. These days, people wage battles over custody of the lone household Internet connection. If you're lucky enough to have a high-speed Internet connection—either DSL or cable—your arm-wrestling days are over. Rather than spring for a costly second hookup, you can piggyback your Mac onto your housemate's broadband connection and invade the Internet simultaneously. All it takes is a small hardware investment and a simple crash course in networking know-how to get up and running.

Here, we show you how to connect multiple computers to a single DSL or cable-modem connection so you can get more baud for your buck—plus firewall protection against hackers.

First, you need to subscribe to either DSL or cable broadband service. Those of you with pokey dial-up connections can technically (though not necessarily effectively) share Internet service (check out Vicomsoft's Internet Gateway software—$149, www.vicomsoft.com—for this alternative), but if speed is what you're after, broadband is a must. Depending on where you live, you may or may not have a choice between DSL or cable service—check to see what's available in your area and sign up.

You also need a router to divvy up the bandwidth from your DSL or cable line to your various Macs. This small piece of hardware connects multiple computers to a high-speed modem, splits the bandwidth, and allocates it to all the connected computers (see "Which Router to Take," p71, for a list of Mac-compatible routers). Don't forget to pick up enough Ethernet (RJ-45) cables to connect the router to your DSL or cable modem, and each computer to the router.

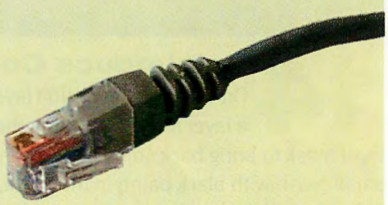
A router functions as a middleperson between your computers, or LAN (local-area network), and the Internet, or WAN (wide-area network). The WAN talks directly to the router through your modem connection; the router then talks to your LAN. Thus, the Internet and your computers never talk to each other directly without going through the router.

Routers offer greater security against Internet invaders—they provide a fixed Internet Protocol (IP) address while doling out distinct IP addresses to each connected computer. This procedure is known as Network Address Translation (NAT). Each networked computer essentially hides behind the fixed identity of the router. No outside computer on the WAN can see the addresses of the computers behind the router, so the router functions as a firewall to protect your computers from the beady gaze of hackers. If hackers can't see your computers, they can't hack into them.

WHAT YOU NEED

Router

High-speed Internet service (DSL or cable)



Ethernet cables (RJ-45)

What the WAN is LAN?

Not privy to networking lingo? Here's our Internet-terminology cheat sheet to keep you sounding smart around the IT department's water cooler.

DHCP (Dynamic Host Configuration Protocol) A technology that assigns a different (dynamic) IP address to a computer every time it connects to the Internet, thus providing greater security. DHCP also abolishes the need to enter an IP address manually for every new user you add to the network.

Firewall A system of hardware, software, or both that prevents unauthorized access to or from a network.

IP (Internet Protocol) Address A unique number (for example, 196.168.1.1) that identifies a computer's network identity.

SET UP YOUR NETWORK

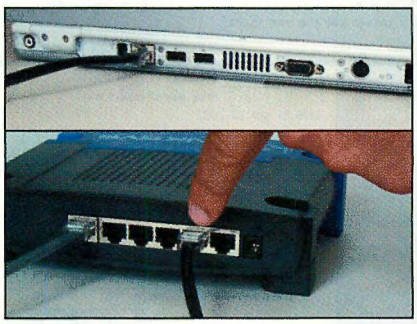
1 Connect the Router to the Modem

Once you have a router, connecting it to the rest of your setup is as easy as plugging in a phone. First, shut off all your equipment—Macs, high-speed modem, and router. Then connect your modem to the WAN port on the router using an Ethernet cable (see "What the WAN Is LAN?" for our networking lingo decoder ring).

Connect your DSL or cable modem (above right) to the router's WAN port (below right) with an Ethernet cable.

2 Connect Your Computers to the Router

Next, connect each computer via its Ethernet port to one of the LAN slots on the router using more Ethernet cables. If you run out of LAN ports before running out of computers, use the Uplink port on the router and attach an additional hub (the Linksys BEFSR41 router—pictured at right—can support 253 users on one DSL or cable line). Finally, plug the router into an AC outlet and power up the router, the modem, and your Mac.



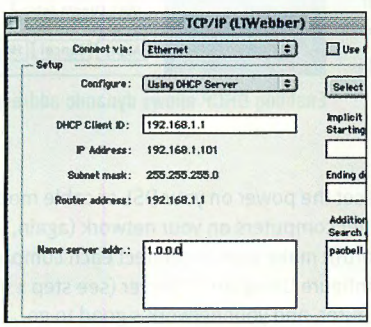
Connect each computer (above) to one of the router's LAN ports (below) with Ethernet cables.

CONFIGURE THE ROUTER

Sadly, not all routers are created equal. Each usually comes equipped with its own specific setup protocol and a poorly written manual to help you stumble through the ordeal. Luckily, router setup is the same for both DSL and cable users. Which computer you choose to set up first is up to you—there's no administrator or head computer. Though your router's specific setup may vary, following are the general steps for configuring a router. Note: Some Internet apps, such as America Online or your ISP's setup software, may conflict with your router's settings. If they do, uninstall these troublemakers.

1 Set Up TCP/IP

Start with your Mac. Under the Apple menu, select Control Panels, then TCP/IP to open the settings window. Select Ethernet from the Connect Via drop-down menu, and select Using DHCP Server from the Configure menu. In the DHCP Client ID field, type your router's default IP address—you can usually find this in the manual. DHCP enables dynamic addressing—though the IP address of your router always stays the same, the router gives each networked computer a different address every time it connects to the Internet.



Enter the IP address in the TCP/IP window.

Which Router to Take

Routers come in a variety of flavors: They can be wired or wireless; they can support Macs, PCs, or both platforms; and they can work with cable and/or DSL services. Before buying a router, read its specs carefully to make sure it supports the features you need. If you're connecting multiple computers to one broadband line, your router should house enough LAN ports to connect your entire network.

You can connect Macs, PCs, and Linux boxes to the same router and share a single DSL or cable line. Each computer must have an Ethernet port, TCP/IP, and any Web browser. Here are a few Mac-friendly routers to consider:

Apple AirPort
$299 (SRP) for AirPort Base Station, $99 (SRP) for AirPort Card; www.apple.com/airport
Wireless, Mac-only hub. Requires one AirPort Base Station plus an AirPort card for each Mac.

Netline Broadband Gateway/4s
$129.99 (SRP); www.proxim.com
Wired, four-port cable and/or DSL router. Compatible with Macs and PCs.

Asanté FriendlyNet
$379 (SRP); www.asante.com
Wired or wireless, three-port cable and/or DSL router with AirPort support. Compatible with Macs and PCs.

Macsense XRouter Aero
$299 (SRP); www.xsense.com
Wired or wireless, four-port cable and/or DSL router. Compatible with Macs and PCs.

Netline Wireless Broadband Gateway
$299.99 (SRP); www.proxim.com
Wireless, cable and/or DSL router. Compatible with Macs and PCs.

Linksys EtherFast BEFSR41
$99 (street); www.linksys.com
Wired, four-port cable and/or DSL router. Compatible with Macs and PCs.

ISP (Internet Service Provider) The company that sells you access to the Internet. Some of the most popular ISPs include Earthlink, AOL, DirectTV DSL, and AT&T Cable.

LAN (local-area network) A network of computers, set up in a home or office, that allows you to share local resources like printers, file servers, and the Internet.

NAT (Network Address Translation) This Internet standard provides a type of firewall to protect your network of computers against the outside world. It provides one set of dynamic IP addresses on the LAN for your network, and a different IP address for your Internet-connected router.

PPPoE (Point-to-Point Protocol over Ethernet) A specification some ISPs use to connect Ethernet users to the Internet via a shared broadband connection.

CONTINUED ON P72

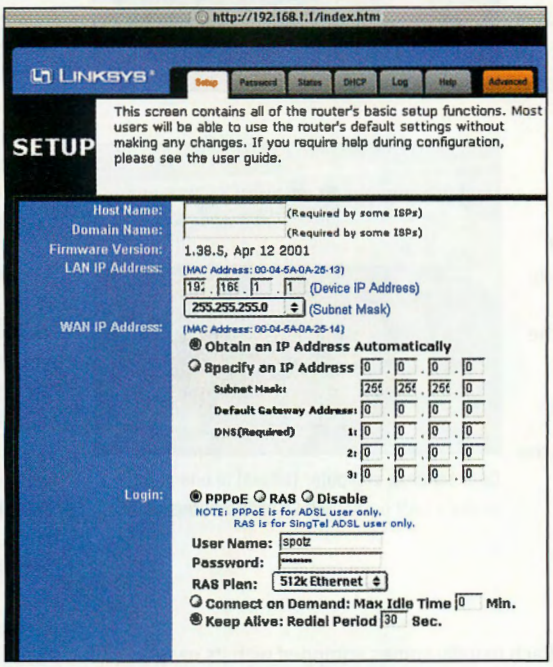
2 Set Up the Router

Next, access your router's Web-based setup page by typing its default IP Address into Netscape's or Explorer's address field. In the Setup page, the top two fields call for a host and domain name. Some ISPs require you to fill in these fields with pass codes your ISP supplies. Otherwise, leave these fields blank.

In the LAN IP Address field, type in the router's default IP Address and then select the Subnet Mask number, also contained in your router's manual. In the WAN IP Address field, check the Obtain An IP Address Automatically button to enable this function.

Some DSL ISPs require you to choose PPPoE (Point-to-Point Protocol over Ethernet) to connect—check with your DSL service provider to see if this is the case. If so, next to Login, check the PPPoE button and then enter the user name and password you selected through your DSL service. If you're a cable subscriber or if your DSL service does not use PPPoE, select Disable (user name and password not required).

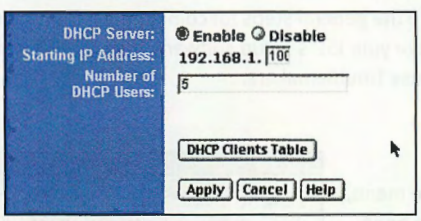
If you want to dictate when your computer connects to the Internet, choose Connect On Demand in the setup window. If you want a 24/7, always-on connection, select Keep Alive. Keep in mind that it's better to take your computer offline when you aren't using it to better protect your network.



Configure the router via the manufacturer's Web site.

3 Configure DHCP

Next, click the DHCP tab at the top of the Web page to open the DHCP controls. Enable DHCP Server and then type in the number of computers on your network in the Number Of DHCP Users field. Leave the Starting IP Address field as is. Then click Apply to save your settings. Your router is now ready for use.



Enabling DHCP allows dynamic addressing.

4 Reset and Reboot

To get your network up and running, reset the power on your DSL or cable modem and then restart your Mac. To set up the other computers on your network (again, you can set up various types—Mac, PC, Linux, and so forth), make sure to connect each computer to the router and set each one's TCP/IP settings to Configure Using DHCP Server (see step 1 in "Configure the Router," p71). Restart each computer, and your network's good to go.

What the WAN Is LAN?

CONTINUED FROM P71

Router A device that allows you to network local computers and connect them to another network, such as the Internet.

TCP (Transmission Control Protocol) A network procedure that allows two computers to transmit and receive streams of data.

WAN (wide-area network) A network of computers that spans a large geographical area, connecting computers around the world (the Internet, for example).

DHCP Dilemma

Even though most routers work cross platform, they were originally designed with Windows in mind. This sometimes causes DHCP problems on non-Windows operating systems, which can translate to long waits when loading a Web page or make your router malfunction—even if you've set the configurations correctly by the book.

If you encounter either of these problems, disable DHCP and assign static IP addresses to all the computers on your network. This won't impair your firewall since the router still displays a different IP address to the outside world, not the IP addresses you assign to your computers. Here's how to do this:

1. Log back on to the router's Web-based setup page. Click the DHCP tab, disable DHCP Server, and click Apply.

2. Launch the TCP/IP control panel on your Mac. Instead of configuring via DHCP, select Manually from the Configure drop-down menu.

3. In the IP Address field, type in a new IP address—this should be the router's IP address followed by two additional numbers of your choice. For example, if your router's IP address is 192.168.1.1, assign a unique IP address to each networked computer, such as 192.168.1.101 or 192.168.1.102. Keep the Subnet Mask number (the one that comes with your router) the same.

4. Enter your router's IP address (the same one you use to access the Web setup page) in the Router Address field.

5. The Name Server Address field should already display the numerical Web address of your ISP's domain server. If this field is blank, consult your ISP's literature and enter its domain server addresses here.

6. Repeat these steps for each computer on your network, making sure to assign a different IP address to every computer.

When traveling with her TiBook, Leigh Webber constantly prowls for generous Internet users with broadband to share.

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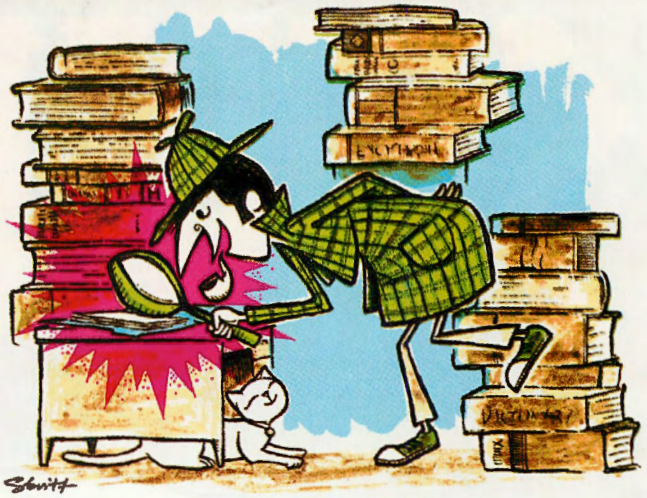

ILLUSTRATION BY S. BRITT

Point Sherlock in the right direction and you'll find data pronto.

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o ***MacAddict,*** **150 North Hill Dr., Brisbane, CA 94005.**

Q Sherlock is a great tool whenever I need help finding things on my Mac, but it takes forever to search a large AppleShare volume. Is there a way to make Sherlock search only certain folders instead of an entire volume?

A You betcha! Not only is Sherlock a powerful tool, many Mac users don't realize how flexible it is. Rather than waiting for Sherlock to search through every nook and cranny of a substantial volume, you can fine-tune your search by simply dragging and dropping any folder or group of folders onto the Sherlock window. Sherlock will then only pull results from these designated directories.

Q I love using Connectix's Virtual Game Station to play PlayStation games on my Mac, but I hate using my Mac's keyboard as a controller. Can I use a PlayStation controller on my Mac?

A You sure can, as long as you have an adapter and supporting software. Kernel Productions makes a popular USB adapter called the JoyPort ($39.95, www.kernel.com), which lets you use PlayStation, Nintendo-64, Genesis, and Atari controllers to play games on a Mac. Of course, if the PlayStation controller doesn't float your boat, you can opt for one of the many Mac USB game controllers—MacInTouch has a list of controller possibilities posted at www.macintouch.com/usb.html.

Connect real game controllers to your Mac with Kernel.com's JoyPort USB.

Q I recently installed an AirPort Base Station in my house. When I access the Internet from my iBook, the Base Station signal is strong in most of the rooms, but in some areas of the house the signal is too weak to maintain a connection. Is there a way I can extend the range and boost the signal from my Base Station?

A Though the AirPort technology offers amazing freedom, it has limitations—and they're exacerbated by any physical interference that comes between the Base Station and your AirPort card–equipped Mac. Maybe your walls are too dense or thick. Maybe you live in a cavernous mansion. Maybe someone decided to build a brick wall between you and your Base Station.

Short of avoiding those weak-signal areas in your house, the obvious solution is to increase the signal power sent out from the Base Station—unfortunately, Apple doesn't offer an official solution for extending its range. Luckily, we here at *MacAddict* have a handy hardware hack you can try. Be forewarned: This will surely void your Base Station's warranty, so proceed with caution.

Since the heart of Apple's Base Station is an Orinoco WaveLAN card, you can boost its range power with a Lucent Orinoco Range Extender Antenna (about $70, www.wavelan.com). Because this extender was originally designed for use with a client computer's WaveLAN PC card, you need to modify your AirPort Base Station to use it. First, remove the three screws that hold together the Base Station, and then remove the screws that hold down the shielding. Take out the PC Card and install the Extender per the instructions printed in its manual. Next, drill a hole in the side of the Base Station to snake out the antenna cable. Finally, reassemble the parts and fire up the Base Station, Extender Antenna, and your Mac—you should see a noticeable gain in AirPort signal strength.

Q Apple's new Web site drives me crazy—every time I download a software update, I have to type in a name and password. Is there a way to avoid this?

A Love it or hate it, the new Apple.com may take a little getting used to, and what can be more frustrating than having to remember yet another name and password? If having to type in your info every time you download really gets your goat, first check Versiontracker.com or Macupdate.com for Apple downloads—sometimes these sites provide direct links to Apple files for downloading. Another way to access Apple downloads is to enter through the backdoor of Apple's download site. At press time, we were able to access a directory listing of all Apple downloads at http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/English-North_American without entering our name or password. We can't guarantee this link will stay alive forever, but it's certainly worth checking out.

Q I love my new G4, but a strange hissing noise emanates from the speakers. What is this and how can I stop it?

A This annoying noise crops up on some G4s. You can do a couple of things to work around the problem. The solution is twofold: First, turn off the modem sound in the Modem control panel to prevent the hissing, and second, make sure your Remote Access control panel is not set to answer calls. As with any phone or fax connected to a phone line, you will hear open-line noise if you don't prevent calls from coming in.

Buz Zoller is glad you made it all the way to the end of his article. Now go out and start holiday shopping!

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*5.89 Million effective pixels *5.33 Megapixel
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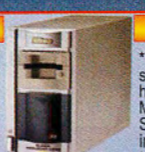
Coolscan 4000ED



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APS ST 18GB Ultra160 LVD	10,000	$229.95	$349.95
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APS ST 36GB Ultra160 LVD	10,000	399.95	549.95
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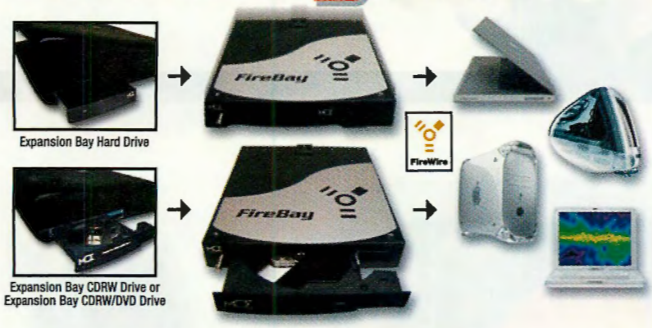

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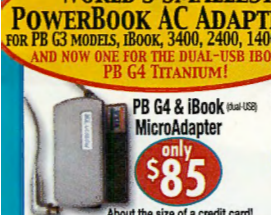

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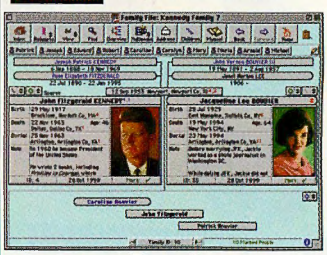
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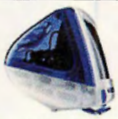

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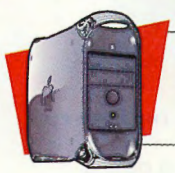

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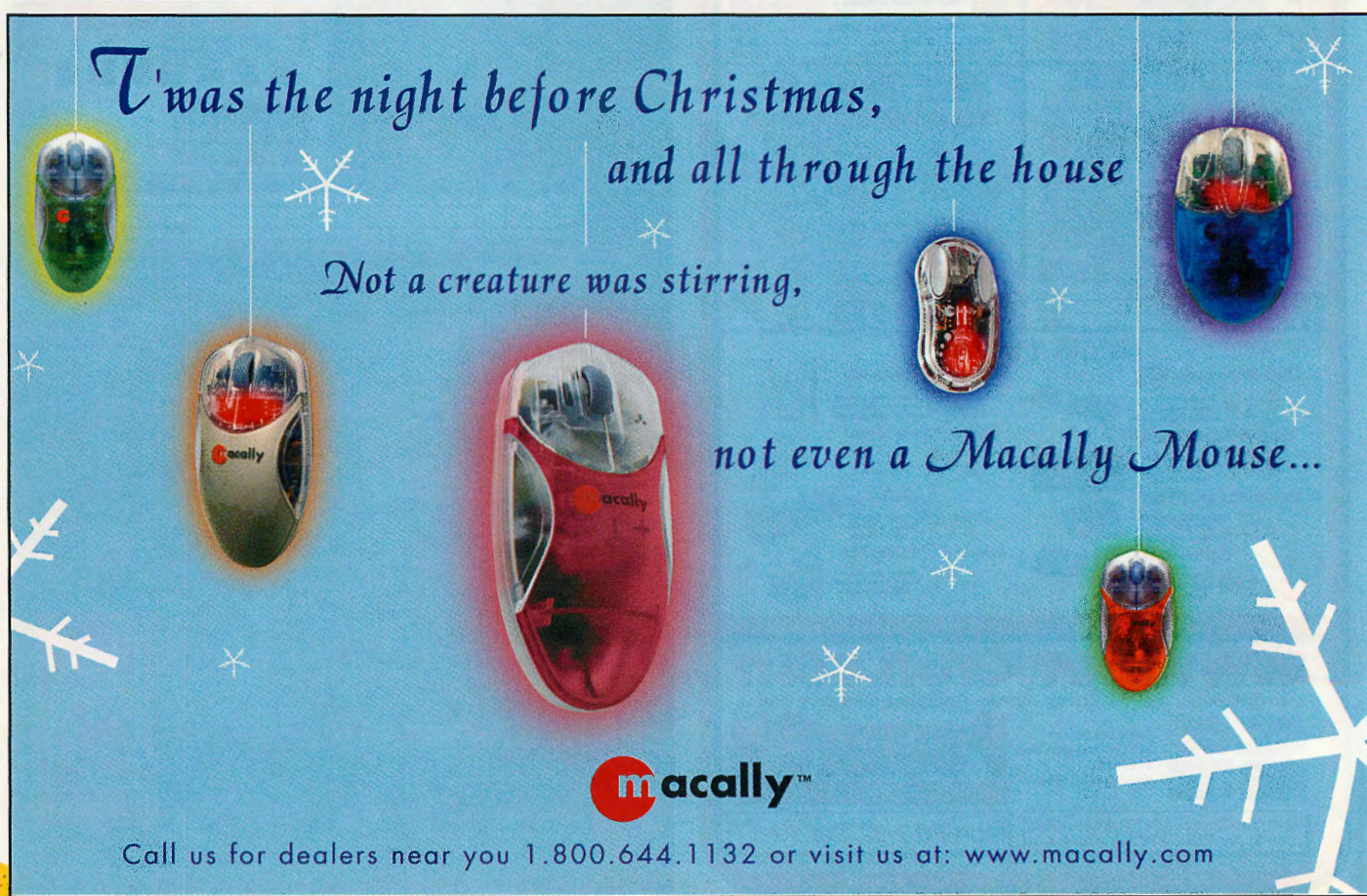

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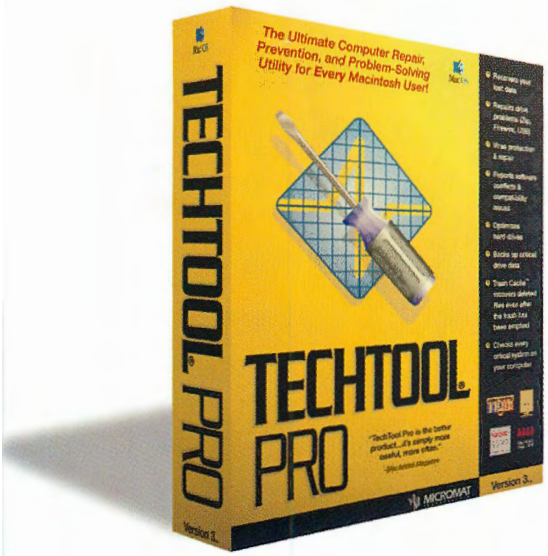
Our Gift to You

Well, all ye *MacAddict* faithful (and not so faithful), we close the book on yet another incredible year. One filled with celebration (our five-year anniversary? You really like us—you really, really like us! Sniff...), and one filled with grief (yes, we were royally spanked by all you school administrators and software developers who wrote in, complaining about our "10 Things You Shouldn't Do With Your Mac" feature). One that brought about change (bye, Dave Reynolds—hello, Rik Myslewski), and one that stayed constant (Quark 4.1.1 keeps on ticking...). One that inspired us technologically (you can do that in Mac OS X?), and one that left us technically drained (how the hell do you do that in Mac OS X?).

Of course, no part of our incredible year would have been possible if it weren't for one man—Steve Jobs. So to celebrate the man, his vision, and his Apple core, we've taken it upon ourselves to pay homage to his innovative self by creating our own innovative effigy for your very own worship or amusement—completely customizable to capture your favorite Steve Jobs era. Happy holidays.

ILLUSTRATION BY DAVID ROSS

In with the new...



TechTool Pro 3 is the super utility for your Macintosh. Besides repairing and recovering data, TechTool Pro can help you circumvent problems in the first place. Our new virus detect and repair feature, as well as our software conflict check feature, lets you keep your computer in tip-top shape. When booted from the included emergency CD, you can even check, repair and optimize your OS X computer.

Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting utility available for your computer. Why would you settle for anything less?

In with the newer...

For Apple's next-generation operating system, you'll need a next-generation disk utility. That's why Micromat has introduced Drive 10, the first and final disk utility for Mac OS X. Problems with your drive? Drive 10 can repair almost any drive problem with one simple click of your mouse. All within OS X's native environment.

While Drive 10 is a new product, it is derived from TechTool Pro, Micromat's world-class diagnostic and repair utility. Using TechTool's time-tested routines as well as some new routines developed exclusively for OS X, Drive 10 offers many tools for checking and repairing any drive on your system. Don't entrust your OS X drive to ancient utilities. Protect your data and drive safely with Drive 10.

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